CHAPTER 4
RESEARCH RESULTS

4.1 STATISTICS OF RESPONDENTS

As shown in Table 4.01, the sample group in this study consists of 178 respondents who are currently studying at University of Malaya, of which 61.8 percent are undergraduate students and the remaining 38.2 percent are post-graduate students. On the average, 15 respondents (8.4 percent) came from various faculties with exception to the Business & Accountancy and Economics & Administration with 38.8 percent and 11.2 percent respectively. The figures are higher because of the additional post-graduate students in these two faculties taking Master of Business Administration and Master of Statistics programme.

Demographically, the respondents reflect the general population of university students in terms of gender differences where there is a higher ratio of female students (56.2 percent) to male students (43.8 percent). On the other hand, the racial composition comprises the three major races in Malaysia, namely 32.0 percent of Malays, 45.5 percent of Chinese, 17.4 percent of Indians and 5.1 percent of other races like indigenous Bumiputera or foreign students. Since there is a higher number of undergraduate students, 58.5 percent of respondents are below 25 years old whereas the balance 41.5 percent are above 26 years old, reflecting the average age group of undergraduate and post-graduate students. As a result of the younger population, about three-quarter (74.2 percent) of the respondents are still single.

Almost all the undergraduate students are not working and they have minimum source of income from scholarships, study loans or their parents. They were therefore categorised under the "RM1,000 and below" income group. The remaining 40.7 percent are well distributed with young executives earning RM1,001 to RM3,000 (15.2 percent), Managers earning between RM3,001 to RM5,000 (14.2 percent) and Senior Managers earning more than RM5,001 (11.3 percent).

Table 4.01: Demographic Profile of Respondents

	Frequency (N)	Percentage (%)
1. Gender:		
Male	78	43.8%
Female	100	56.2%
Total	178	100.0%
2. Race:		
Malay	57	32.0%
Chinese	81	45.5%
Indian	31	17.4%
Others	9	5.1%
Total	178	100.0%
3. Age Group:		
20 years and below	18	10.2%
21 to 25 years	85	48.3%
26 to 30 years	31	17.6%
31 to 35 years	35	19.9%
36 to 40 years	5	2.8%
41 years and above	2	1.1%
Total	176	100.0%
4. Marital Status:		
Single	132	74.2%
Married without Children	18	10.1%
Married with Children	27	15.2%
Divorced or Single Parent	1	0.6%
Total	178	100.0%
5. Educational Level:		
Undergraduate	110	61.8%
Post-graduate	68	38.2%
Total	178	100.0%
6. Faculty:		
Arts and Social Sciences	14	7.9%
Business and Accountancy	69	38.8%
Economics and Administration	20	11.2%
Education	15	8.4%
Law	16	9.0%
Science	13	7.3%
Computer Science	17	9.6%
Engineering and Architecture	14	7.9%
Total	178	100.0%

	Frequency (N)	Percentage (%)
7. Income Level:		
RM 1,000 and below	105	59.3%
RM 1,001 to RM 3,000	27	15.2%
RM 3,001 to RM 5,000	25	14.2%
RM 5,001 and above	20	11.3%
Total	177	100.0%
8. Occupational Level:		
CEO / MD / Director	0	0.0%
GM / Manager	30	38.5%
Executive / Supervisor	16	20.5%
Officer	9	11.5%
Others	23	29.5%
Total	78	100.0%
9. Occupational Type:		
Accounting and Finance	10	12.8%
HRM and Administration	4	5.1%
Sales and Marketing	15	19.2%
Operations	10	12.8%
Engineering	6	7.7%
Computing	5	6.4%
Research and Development	7	9.0%
Others	21	26.9%
Total	78	100.0%

Lastly, the occupational level and occupational type did not include undergraduate students since they were studying full-time. From the occupational level perspective, none was from the top management level but more than a third (38.5 percent) came from senior management positions with a fifth (20.5 percent) were young executives. There was also 29.5 percent from other positions, mostly teachers or lecturers and some full-time post-graduate students. These working students are mainly from the background of Sales & Marketing (19.2 percent), Accounting & Finance (12.8 percent) and Operations (12.8 percent).

4.2 BANKING BEHAVIOUR OF RESPONDENTS

Consumer behaviour is defined as the study of the buying units (individual consumer or group) and the exchange processes involved in acquiring, consuming and disposing of goods, services, experiences and ideas (Mowen and Minor, 1998). A *consumer is at one end of an exchange process in which resources are* transferred between two parties, A bank teller, for example, trades banking services for a fee. Other resources such as feelings, information and status may also be exchanged between the parties.

4.2.1 Ownership of Bank Account

Table 4.02 (next page) reveals to us that all the respondents (100 percent) in this random survey have a bank account, at least a savings account to carry out their banking transactions. But only a third are having a current account (29.8 percent) or a fixed deposit account (30.9 percent). Surprisingly, only 4.5 percent of the respondents have other accounts like credit card, combined account or loans with the bank although there are 38.2 percent of working students.

4.2.2 Usage of Electronic Banking Media

Among the various electronic banking media available in Malaysia, the most popular choice is none other than the Automated Teller Machine (ATM) with almost 100 percent claiming that they have used it since the inception of ATM in the early 1980's. The next rising star is the phone banking service with 19.7 percent user followed by the new PC banking service with merely 1.7 percent user. Phone banking is easily accepted locally, as most households in Malaysia have a fixed line at home and they are comfortable with the telephone. However, the computer with Internet facilities is only available in the office or among the affluent families.

Table 4.02: Ownership, Usage and Familiarity with Electronic Banking (By All Respondents & Gender)

Ownership of Account		Male (%)	Female (%)	All Respondents (%)
1 Bank Account	Yes	100.0	100.0	100.0
2 Savings Account	Yes	100.0	100.0	100.0
3 Current Account	Yes	41.0	21.0	29.8
	No	59.0	79.0	70.2
4 Fixed Deposit	Yes	32.1	30.0	30.9
	No	67.9	70.0	69.1
5 Others	Yes	6.4	3.0	4.5
	No	93.6	97.0	95.5
Usage of Electronic Banking Media		**Male (%)**	**Female (%)**	**All Respondents (%)**
1 ATM	Yes	98.7	100.0	99.4
	No	1.3	0.0	0.6
2 Phone banking	Yes	21.8	18.0	19.7
	No	78.2	82.0	80.3
3 PC banking	Yes	2.6	1.0	1.7
	No	97.4	99.0	98.3
Familiarity of Electronic Banking Devices		**Male (%)**	**Female (%)**	**Total (%)**
1 ATM Card	Unfamiliar	7.7	8.0	7.9
	Not Sure	2.6	1.0	1.7
	Familiar	89.7	91.0	90.4
2 Telephone	Unfamiliar	34.6	39.0	37.1
	Not Sure	37.2	31.0	33.7
	Familiar	28.2	30.0	29.2
3 Computer	Unfamiliar	52.6	49.0	50.6
	Not Sure	30.8	37.0	34.3
	Familiar	16.7	14.0	15.2

4.2.3 Familiarity with Electronic Banking Media

The question on familiarity of electronic banking devices drew an interesting insight. Although Malaysians should be comfortable using the telephone, more than two-thirds still claimed that they were unfamiliar or not sure of how to use the telephone. Only 29.2 percent were confident of using the telephone. Also, more than four-fifth of the university student responses were unfavourable towards using the computer, although most of them were using it for their assignments. Could this be a mental blockage when the telephone and computer were associated with electronic banking? Maybe they have little or no experience with phone or PC banking; thus, they were not able to change their mindset over a simple question on familiarity with telephone or computer.

4.3.4 Banking Behaviour of Different Demographic Variables

What actually influence consumers in their banking behaviour? Looking from the gender perspective, there was no significant difference in terms of ownership, usage and familiarity with electronic banking, except for the current account ownership (Table 4.02). One reason could be consumer banking products are generic products that do not differentiate the market segment between male and female, unlike fashionable items.

Among the ethnic groups, more Chinese had different bank accounts than the Malays and Indians (Table 4.03). Forty two percent of the Chinese had current accounts compared to only 12.3 percent of the Malays and 25.8 percent of the Indians. The disparity increases with more than half of the Chinese holding a fixed deposit account but almost none Malays (3.5 percent) and less than one-fifth of the Indians have a fixed deposit account. Such differences could be due to the Chinese culture that emphasizes the importance of managing their cash-flow compare to their counterparts. Besides, the Malays tend to put their savings elsewhere since the government guarantees a 10 percent return on their investment through Amanah Saham Nasional (ASN) and Amanah Saham Bumiputera (ASB).

Table 4.03: Ownership, Usage and Familiarity with Electronic Banking (By Ethnic Group)

Ownership of Account		Malay (%)	Chinese (%)	Indian (%)	Other (%)
1 Bank Account	Yes	100.0	100.0	100.0	100.0
2 Savings Account	Yes	100.0	100.0	100.0	100.0
3 Current Account	Yes	12.3	42.0	25.8	44.4
	No	87.7	58.0	74.2	54.6
4 Fixed Deposit	Yes	3.5	55.6	16.1	33.3
	No	96.5	44.4	83.9	66.7
5 Others	Yes	0.0	6.2	6.5	11.1
	No	100.0	93.8	93.5	88.9
Usage of Electronic Banking Media		**Malay (%)**	**Chinese (%)**	**Indian (%)**	**Other (%)**
1 ATM	Yes	100.0	98.8	100.0	100.0
	No	0.0	1.2	0.0	0.0
2 Phone banking	Yes	17.5	19.8	16.1	44.4
	No	82.5	80.2	83.9	55.6
3 PC banking	Yes	1.8	0.0	0.0	22.2
	No	98.2	100.0	100.0	77.8
Familiarity of Electronic Banking Devices		**Malay (%)**	**Chinese (%)**	**Indian (%)**	**Other (%)**
1 ATM Card	Unfamiliar	5.3	8.6	12.9	0.0
	Not Sure	1.8	1.2	0.0	11.1
	Familiar	93.0	90.1	87.0	88.9
2 Telephone	Unfamiliar	28.9	39.5	41.9	44.4
	Not Sure	33.3	37.0	32.3	11.1
	Familiar	36.8	23.5	25.8	44.1
3 Computer	Unfamiliar	42.1	56.8	48.4	55.6
	Not Sure	35.1	33.3	35.5	33.3
	Familiar	22.8	9.9	16.1	11.1

Table 4.04: Ownership, Usage and Familiarity with Electronic Banking (By Age Group)

Ownership of Account		<20 (%)	21-25 (%)	26-30 (%)	31-35 (%)	36-40 (%)	>41 (%)
1 Bank Account	Yes	100.0	100.0	100.0	100.0	100.0	100.0
2 Savings Account	Yes	100.0	100.0	100.0	100.0	100.0	100.0
3 Current Account	Yes	0.0	8.2	51.6	71.4	60.0	50.0
	No	100.0	91.8	48.4	28.6	40.0	50.0
4 Fixed Deposit	Yes	22.2	11.8	35.5	65.7	80.0	50.0
	No	77.8	88.2	64.5	34.3	20.0	50.0
5 Others	Yes	0.0	0.0	12.9	11.4	0.0	0.0
	No	100.0	100.0	87.1	88.6	100.0	100.0
Usage of Electronic Banking Media		**<20 (%)**	**21-25 (%)**	**26-30 (%)**	**31-35 (%)**	**36-40 (%)**	**>41 (%)**
1 ATM	Yes	100.0	100.0	100.0	100.0	80.0	100.0
	No	0.0	0.0	0.0	0.0	20.0	0.0
2 Phone banking	Yes	0.0	10.6	41.9	34.3	20.0	0.0
	No	100.0	89.4	58.1	65.7	80.0	100.0
3 PC banking	Yes	0.0	2.4	0.0	2.9	0.0	0.0
	No	100.0	97.6	100.0	97.1	100.0	100.0
Familiarity of Electronic Banking Devices		**<20 (%)**	**21-25 (%)**	**26-30 (%)**	**31-35 (%)**	**36-40 (%)**	**>41 (%)**
1 ATM Card	Unfamiliar	5.6	5.9	16.1	5.7	0.0	50.0
	Not Sure	0.0	3.5	0.0	0.0	0.0	0.0
	Familiar	94.4	90.6	83.9	94.3	100.0	50.0
2 Telephone	Unfamiliar	16.7	44.7	35.5	28.6	40.0	0.0
	Not Sure	72.2	31.8	32.3	20.0	20.0	100.0
	Familiar	11.1	23.5	32.3	51.4	40.0	0.0
3 Computer	Unfamiliar	22.2	48.2	51.6	65.7	80.0	0.0
	Not Sure	61.1	36.5	25.8	25.7	0.0	100.0
	Familiar	16.7	15.3	22.6	8.6	20.0	0.0

Table 4.05: Ownership, Usage and Familiarity with Electronic Banking (By Marital Status)

Ownership of Account		Single (%)	M-N-C (%)	M-W-C (%)	Divorce (%)
1 Bank Account	Yes	100.0	100.0	100.0	100.0
2 Savings Account	Yes	100.0	100.0	100.0	100.0
3 Current Account	Yes	18.2	61.1	66.7	0.0
	No	81.8	38.9	33.3	100.0
4 Fixed Deposit	Yes	21.2	61.1	55.6	100.0
	No	78.8	38.9	44.4	0.0
5 Others	Yes	1.5	5.6	18.5	0.0
	No	98.5	94.4	81.0	100.0
Usage of Electronic Banking Media		**Single (%)**	**M-N-C (%)**	**M-W-C (%)**	**Divorce (%)**
1 ATM	Yes	100.0	100.0	96.3	100.0
	No	0.0	0.0	3.7	0.0
2 Phone banking	Yes	13.6	44.4	29.6	100.0
	No	86.4	55.6	70.4	0.0
3 PC banking	Yes	1.5	0.0	0.0	100.0
	No	98.5	100.0	100.0	0.0
Familiarity of Electronic Banking Devices		**Single (%)**	**M-N-C (%)**	**M-W-C (%)**	**Divorce (%)**
1 ATM Card	Unfamiliar	9.1	11.1	0.0	0.0
	Not Sure	2.3	0.0	0.0	0.0
	Familiar	88.6	88.9	100.0	100.0
2 Telephone	Unfamiliar	39.4	33.3	29.6	0.0
	Not Sure	37.1	22.2	25.6	0.0
	Familiar	23.5	44.4	44.4	100.0
3 Computer	Unfamiliar	48.5	61.1	51.9	100.0
	Not Sure	37.9	27.8	22.2	0.0
	Familiar	13.6	11.1	25.9	0.0

Table 4.06: Ownership, Usage and Familiarity with Electronic Banking (By Field of Study)

Ownership of Account		Arts (%)	Science (%)	Total (%)
1 Bank Account	Yes	100.0	100.0	100.0
2 Savings Account	Yes	100.0	100.0	100.0
3 Current Account	Yes	38.8	2.3	29.8
	No	61.2	97.7	70.2
4 Fixed Deposit	Yes	34.3	20.5	30.9
	No	65.7	79.5	69.1
5 Others	Yes	6.0	0.0	4.5
	No	94.0	100.0	95.5
Usage of Electronic Banking Media		**Arts (%)**	**Science (%)**	**Total (%)**
1 ATM	Yes	99.3	100.0	99.4
	No	0.7	0.0	0.6
2 Phone banking	Yes	23.9	6.8	19.7
	No	76.1	93.2	80.3
3 PC banking	Yes	2.2	0.0	1.7
	No	97.8	100.0	98.3
Familiarity of Electronic Banking Devices		**Arts (%)**	**Science (%)**	**Total (%)**
1 ATM Card	Unfamiliar	8.2	6.8	7.9
	Not Sure	2.2	0.0	1.7
	Familiar	89.6	93.2	90.4
2 Telephone	Unfamiliar	36.6	38.6	37.1
	Not Sure	32.8	36.4	33.7
	Familiar	30.6	25.0	29.2
3 Computer	Unfamiliar	53.0	43.2	50.6
	Not Sure	35.1	31.8	34.3
	Familiar	11.9	25.0	15.2

Table 4.07: Ownership, Usage and Familiarity with Electronic Banking (By Income Group)

Ownership of Account		<1K (%)	1K-3K (%)	3K-5K (%)	>5K (%)
1 Bank Account	Yes	100.0	100.0	100.0	100.0
2 Savings Account	Yes	100.0	100.0	100.0	100.0
3 Current Account	Yes	6.7	25.9	76.0	95.0
	No	93.3	74.1	24.0	5.0
4 Fixed Deposit	Yes	13.3	33.3	64.0	75.0
	No	86.7	66.7	36.0	25.0
5 Others	Yes	0.0	0.0	16.0	20.0
	No	100.0	100.0	84.0	80.0
Usage of Electronic Banking Media		**<1K (%)**	**1K-3K (%)**	**3K-5K (%)**	**>5K (%)**
1 ATM	Yes	100.0	100.0	96.0	100.0
	No	0.0	0.0	4.0	0.0
2 Phone banking	Yes	6.7	29.6	48.0	35.0
	No	93.3	70.4	52.0	65.0
3 PC banking	Yes	1.9	0.0	4.0	0.0
	No	98.1	100.0	96.0	100.0
Familiarity of Electronic Banking Devices		**<1K (%)**	**1K-3K (%)**	**3K-5K (%)**	**>5K (%)**
1 ATM Card	Unfamiliar	5.7	14.8	16.0	0.0
	Not Sure	2.9	0.0	0.0	0.0
	Familiar	91.4	85.2	84.0	100.0
2 Telephone	Unfamiliar	41.0	40.7	24.0	30.0
	Not Sure	36.2	37.0	28.0	25.0
	Familiar	22.9	22.2	48.0	45.0
3 Computer	Unfamiliar	45.7	51.9	60.0	60.0
	Not Sure	38.1	37.0	24.0	25.0
	Familiar	16.2	11.1	16.0	15.0

Table 4.08: Ownership, Usage and Familiarity with Electronic Banking (By Occupational Level)

Ownership of Account		Manager (%)	Executive (%)	Officer (%)	Other (%)
1 Bank Account	Yes	100.0	100.0	100.0	100.0
2 Savings Account	Yes	100.0	100.0	100.0	100.0
3 Current Account	Yes	90.0	56.3	44.4	30.4
	No	10.0	43.8	55.6	69.6
4 Fixed Deposit	Yes	80.0	31.3	55.6	30.4
	No	20.0	68.8	44.4	69.4
5 Others	Yes	13.3	18.8	0.0	4.3
	No	86.7	81.3	100.0	95.7
Usage of Electronic Banking Media		**Manager (%)**	**Executive (%)**	**Officer (%)**	**Other (%)**
1 ATM	Yes	100.0	93.8	100.0	100.0
	No	0.0	6.3	0.0	0.0
2 Phone banking	Yes	33.3	68.8	11.1	30.4
	No	66.7	31.3	88.9	69.6
3 PC banking	Yes	3.3	0.0	0.0	4.3
	No	96.7	100.0	100.0	95.7
Familiarity of Electronic Banking Devices		**Manager (%)**	**Executive (%)**	**Officer (%)**	**Other (%)**
1 ATM Card	Unfamiliar	3.3	25.0	11.1	8.7
	Not Sure	0.0	0.0	0.0	4.3
	Familiar	96.7	75.0	88.9	87.0
2 Telephone	Unfamiliar	30.0	25.0	33.3	39.1
	Not Sure	26.7	37.5	44.4	21.7
	Familiar	43.3	37.5	22.2	39.1
3 Computer	Unfamiliar	63.3	50.3	44.4	60.9
	Not Sure	23.3	37.5	55.6	21.7
	Familiar	13.3	12.5	0.0	17.4

Table 4.09: Ownership, Usage and Familiarity with Electronic Banking (By Occupational Type)

Ownership of Account		Acct (%)	HRM (%)	Sales (%)	OP (%)	Eng (%)	Comp (%)	R&D (%)	Other (%)
1 Bank Acct	Yes	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2 Savings Acct	Yes	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
3 Current Acct	Yes	40.0	100.0	73.3	80.0	100.0	80.0	28.6	38.1
	No	60.0	0.0	26.7	20.0	0.0	20.0	71.4	61.9
4 Fixed Deposit	Yes	30.0	100.0	53.3	60.0	83.3	60.0	71.4	33.3
	No	70.0	0.0	46.7	40.0	16.7	40.0	28.6	66.7
5 Others	Yes	10.0	25.0	20.0	0.0	33.3	0.0	0.0	4.8
	No	90.0	75.0	80.0	100.0	66.7	100.0	100.0	95.2
Usage of Electronic Banking Media		**Acct (%)**	**HRM (%)**	**Sales (%)**	**OP (%)**	**Eng (%)**	**Comp (%)**	**R&D (%)**	**Other (%)**
1 ATM	Yes	100.0	100.0	93.3	100.0	100.0	100.0	100.0	100.0
	No	0.0	0.0	6.7	0.0	0.0	0.0	0.0	0.0
2 Phone banking	Yes	20.0	0.0	66.7	40.0	93.3	40.0	0.0	28.6
	No	80.0	100.0	33.3	60.0	16.7	60.0	100.0	71.4
3 PC banking	Yes	0.0	0.0	6.7	0.0	0.0	0.0	0.0	4.8
	No	100.0	100.0	93.3	100.0	100.0	100.0	100.0	95.2
Familiarity of Electronic Banking Devices		**Acct (%)**	**HRM (%)**	**Sales (%)**	**OP (%)**	**Eng (%)**	**Comp (%)**	**R&D (%)**	**Other (%)**
1 ATM Card	Unfam.	10.0	0.0	6.7	10.0	33.3	0.0	14.3	9.5
	Not Sure	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.8
	Familiar	90.0	100.0	93.3	90.0	66.7	100.0	85.7	85.7
2 Telephone	Unfam.	10.0	25.0	26.7	40.0	33.3	40.0	42.9	38.1
	Not Sure	60.0	50.0	20.0	30.0	16.7	20.0	28.6	23.8
	Familiar	30.0	25.0	53.3	30.0	50.0	40.0	28.4	38.1
3 Computer	Unfam.	20.0	75.0	80.6	50.0	50.0	80.0	28.6	66.7
	Not Sure	60.0	25.0	13.3	40.0	33.3	0.0	57.1	19.0
	Familiar	20.0	0.0	6.7	10.0	16.7	20.0	14.3	14.3

The age factor accounts for the some differences in banking behaviour (Table 4.04). The ownership of account clearly signified that the current account holders aged between 26 to 40 years old whereas the fixed deposit account holders were slightly older between 31 to 40 years old. This is mainly because they are working students with additional income and thus, they are more actively involved in banking. Such differences is also reflected in income group where the users of current and fixed deposit account are those earning more than RM3,001 monthly income (Table 4.07). It has been found that the higher the social class a person belongs to, the greater the propensity to save (Meidan, 1996).

Similarly, the majority of the phone banking users were aged between 26 to 40 years old with more than RM3,001 monthly income. Surprisingly, only 11.1 percent of those below 20 years old were familiar with the usage of telephone, compared to 51.4 percent of the 31 to 35 years old group. The trend was reversed for the usage of computer where those below 30 years old were more familiar compared to those who were above 31 years old. These two trends have shown that the older respondents are more familiar with the usage of telephone but the younger respondents are more familiar with the computer instead.

A study by Burnett (1990) concluded that there was a significant difference in bank behaviour among the divorced, the never married and the married persons. This study supported that more married consumers, whether with or without children, and single parents had different bank accounts and had used either the phone or PC banking facilities. Table 4.05 had shown that more than 60 percent of married consumers had current and fixed deposit account compared to only less than 20 percent of the singles. These married consumers who have family responsibilities tend to opt for convenience of location and flexibility of time in banking through using the phone and PC banking facilities.

Finally, the occupational level and occupational type were also examined. Based on the feedback, more Managers (90 percent) and Executives (56.3 percent) had current accounts than Officers and other positions (Table 4.08). But more Executives (68.8 percent) and other positions (69.4 percent) did not have fixed

deposit account compared to the Managers and Officers. This is because the young Executives had started working a few years and they did not have excess funds to be kept aside. The study also revealed that the Executives (68.8 percent) were the highest users of phone banking, followed by the Managers (33.3 percent) and other positions (30.4 percent). Only 11.1 percent of the Officers have used the phone banking facility. Executives are more active in their job and that is why they require phone banking service to manage their cash-flow more effectively.

Generally, working students of different occupational type possessed current accounts and had used phone banking services (Table 4.09). The findings revealed an interesting fact that fewer Accountants and Researchers had bank accounts than their colleagues did in other departments especially in ownership of current account. This could be the characteristic of Accountants and Researchers who are more calculative in money matters since current account does not provide any interest to the depositors. The Accountants and Researchers were also less inclined to using the phone banking services compared to their colleagues. This could be attributed to the nature of their jobs that is more introverts and maybe they do not trust the electronic devices in handling their banking transactions.

In short, those who have higher income and in managerial positions tend to own different types of bank account. They are usually married Chinese men in the older age group. Although users of electronic banking media also tend to have a higher income, they are generally younger in their executive positions that are married without children and in the sales or engineering departments.

4.3 ANALYSIS OF MEASURES

In any research study, there is a need to have a good measurement for the scales used to analyse a set of data. One of the major criteria for evaluating measurements is the reliability analysis. Broadly defined, reliability is the degree to which measures are free from error and therefore yield consistent results (Paul, 1979). As such, the reliability of the three main variables of this research namely, the

positiveness of attitude toward electronic banking, the inhibition of electronic banking and the friendliness of information technology, were evaluated by calculating its coefficient of reliability or known as the Cronbach's Coefficient Alpha.

Table 4.10: Reliability of Scale

Positiveness of Attitude Toward Electronic Banking	Alpha if Item Deleted
1 Very useful	0.8988
2 Very reliable	0.8996
3 Very secure	**0.9092**
4 Very private	0.9046
5 Very convenient (place)	0.9007
6 Very flexible (time)	0.8976
7 Very efficient	0.8963
8 Very cost effective	0.9041
9 Very easy to use	0.8986
10 Very personalised	0.8996
11 Very prestigious	0.9081
12 Very innovative	0.9007

Reliability Coefficients

Number of Cases = 178.0
Number of Items = 12.0

Alpha = 0.9091

Inhibition of Electronic Banking	Alpha if Item Deleted
1 Risk of losing PIN	0.7754
2 Time consuming	0.7686
3 Lack of security	0.7759
4 Lack of privacy	0.7766
5 Lack of trust	0.7721
6 System breakdown	0.7867
7 Limited services	0.7868
8 No personal attention	0.7864
9 Difficult to use	0.7785
10 High cost of computer	0.7855
11 No time to learn	0.7802
12 Embarrass to ask	0.7856
13 Don't know how to use	0.7894
14 Afraid of Y2K problem	0.7737
15 Don't need them	**0.8036**

Reliability Coefficients

Number of Cases = 175.0
Number of Items = 15.0

Alpha = 0.7935

Friendliness of Information Technology	Alpha if Item Deleted
1 Connected to friends by e-mail	0.6025
2 Surfing Internet is wasting time	0.6326
3 Have own e-mail account	0.6404
4 IT is making my life miserable	0.6481
5 Spend most time with computer	0.6287
6 Use computer only if necessary	0.6353
7 Have my own computer at home	0.6399
8 Only use Word & Excel	0.6442
9 Excited about recent development in IT	0.6458
10 IT does not increase productivity	0.6365
11 Always in touch with IT news	0.6336
12 Don't read Computimes / InTech	0.6547

Reliability Coefficients

Number of Cases = 178.0
Number of Items = 12.0

Alpha = 0.6570

The above summary shows that the Cronbach's Coefficient Alpha for all three variables in this research ranges from 0.6570 to 0.9091. This signifies that the scale for positiveness of attitude toward electronic banking is 90.91 percent reliable and it can even be slightly improved to alpha = 0.9092 if item 3 is deleted. Whereas the scale on inhibition of electronic banking is 79.35 percent reliable and can be further improved to alpha = 0.8036 if item 15 is deleted. Lastly, the reliability coefficients for the friendliness of information technology is only 65.70 percent but since this study is generally exploratory in nature, it satisfies the basic requirement of minimum 60 percent for researches of this kind.

4.4 TESTING OF HYPOTHESIS

The independent sample T-test was used to examine the variance of means between two groups such as gender differences, educational levels and field of study. The null hypothesis is a statement about a status quo in which it states that both the means are equal and there is no difference with regard to the individual items on the scales. A significance level of alpha, α = 0.05 was selected to determine whether to accept or reject the null hypothesis in order to reflect a 95 percent confidence level. If $\alpha \leq 0.05$, we will reject the null hypothesis and accept the alternative hypothesis and conclude that there is a significant difference between the two means. Otherwise, if $\alpha > 0.05$, we will accept the null hypothesis and conclude that there is no significant difference between the two means.

Similarly, to compare the variance of means for more than two groups, a one-way analysis of variance (ANOVA) was used. These categories include ethnic differences, age groups, marital status, income levels, occupational levels and occupational types. The null hypothesis will explain that there is no difference in their responses. Again, the significance level of alpha, α = 0.05 was selected to determine whether to accept or reject the null hypothesis in order to reflect a 95 percent confidence level. Accepting null hypothesis would mean that there is no significant difference between the groups whereas, accepting the alternative hypothesis when there is a significant difference between the groups.

4.4.1 Banking Behaviour of Undergraduates and Postgraduates

From the earlier analyses, respondents of different gender, ethnic groups, age groups, marital status, field of study, income levels, occupational levels and occupational types were found to have different banking behaviour in terms of ownership, usage and familiarity of electronic banking. Here, a test on the first research question will be done:

(H1) There are significant differences in banking behaviour among undergraduate and post-graduate students in relation to awareness, involvement, usage and level of satisfaction of electronic banking media.

a) Consumer Awareness and Involvement

The process through which consumers are exposed to information, attend to it, comprehend it, place it in memory and retrieve it for later use is called consumer information processing (Mowen and Minor, 1998). Consumer involvement, in the following buying process, is the perceived personal importance and/or interest consumers attach to the acquisition, consumption and disposition of a good, a services or an idea (Celsi and Olson, 1998). As their involvement increases, consumers have a greater motivation to attend to, comprehend and elaborate on information pertaining to the purchase. In general, consumer involvement increases when the product or service under consideration is more expensive, socially visible and risky to purchase. How do the university students rate in terms of awareness and involvement in electronic banking?

Table 4.11: Awareness of Electronic Banking Media Offered by Bank

Electronic Banking Media Offered by Bank		Undergrad (%)	Post-grad (%)	Total (%)
1 ATM	Yes	100.0	100.0	100.0
2 Phone banking	Yes	24.5	60.3	38.2
	No	6.4	7.4	6.7
	Don't know	69.1	32.4	55.1
3 PC banking	Yes	10.9	20.6	14.6
	No	7.3	20.6	12.4
	Don't know	81.8	58.8	73.0

From the above Table 4.11, all the respondents were aware of the ATM offered by their respective banks. But less than half of them (44.9 percent) were aware of the additional phone banking service offered by their banks and even worse, almost three quarter (73 percent) did not know whether their bank offer any

PC banking service. Such low level of awareness in phone or PC banking services could be attributed to the ineffectiveness of banks' advertising strategy to communicate the new services to consumers. Fortunately, more post-graduate students were aware of phone banking (67.7 percent) and PC banking (41.2 percent). This could be their greater exposure to banking information in terms of usage and access to different medium of advertisement.

Table 4.12: Awareness of Bank's Advertising Medium

Bank's Advertising Medium		Undergrad (%)	Post-grad (%)	Total (%)
1 Bank's pamphlet	Yes	75.2	76.1	75.6
	No	24.8	23.9	24.4
2 Television	Yes	75.2	67.2	72.2
	No	24.8	32.8	27.8
3 Radio	Yes	43.1	31.3	38.6
	No	56.9	68.7	61.4
4 Newspaper	Yes	75.2	88.1	80.1
	No	24.8	11.9	19.9
5 Magazine	Yes	53.2	59.7	55.7
	No	46.8	40.3	44.3
6 Word-of-mouth	Yes	46.8	47.8	47.2
	No	53.2	52.2	52.8
7 Others	Yes	2.8	0.0	1.7
	No	97.2	100.0	98.3

Among the various types of advertising medium, newspaper (80.1 percent), bank's pamphlet (75.6 percent) and television (72.7 percent) ranked the highest in the ability to communicate banking information to the consumers. Other advertising medium like billboard and Internet were not popular among Malaysian consumers. One medium that was significant with more post-graduates read the newspaper compared to the undergraduates since many undergraduates seldom read newspaper. In addition, banks tend to advertise their new products more often in newspaper as they believe that advertising in a paper will reach the target customers

based on the newspaper's readership (Marashdeh, 1993). Moreover, newspaper advertising allows more information to be imparted to consumers than television advertisement.

Table 4.13: Ability to Recall Bank's Advertisement

Recall Bank's Advertisement		Undergrad (%)	Post-grad (%)	Total (%)
1 Arab-Malaysian	Yes	58.2	41.2	51.7
	No	41.8	58.8	48.3
2 BSN Commercial	Yes	49.1	22.1	38.8
	No	50.9	77.9	61.2
3 Citibank	Yes	52.7	72.1	60.1
	No	47.3	27.9	39.9
4 Hong Leong Bank	Yes	57.3	52.9	55.6
	No	42.7	47.1	44.4
5 Hongkong Bank	Yes	40.9	66.2	50.6
	No	59.1	33.8	49.4
6 Malayan Banking	Yes	77.3	60.3	70.8
	No	22.7	39.7	29.2
7 Multi-Purpose Bank	Yes	26.4	10.3	20.2
	No	73.6	89.7	79.8
8 Pacific Bank	Yes	20.0	11.8	16.9
	No	80.0	88.2	83.1
9 Phileo Allied Bank	Yes	24.5	36.8	29.2
	No	75.5	63.2	70.8
10 RHB Bank	Yes	64.5	48.5	58.4
	No	35.5	51.5	41.6
11 Southern Bank	Yes	28.2	25.0	27.0
	No	71.8	75.0	73.0
12 Standard Chartered	Yes	62.7	67.6	64.6
	No	37.3	32.4	35.4

Out of the twelve banks that offer electronic banking services, Malayan Banking (70.8 percent), Standard Chartered Bank (64.6 percent) and Citibank (60.1 percent) seem to capture consumers' attention more than the other local or foreign banks in Malaysia as the respondents were able to recall their advertisements. These larger banks in fact have been investing heavily in advertisement in newspaper, television and even magazine to build a good rapport with the customers and non-customers. Smaller banks like Pacific Bank, Multi-Purpose Bank and Phileo Allied Bank that have lower advertisement budget, could not capture the attention of consumers. Post-graduate students tend to recall the advertisements of foreign banks better while the undergraduates tend to recall most of the advertisements of local banks. Could this be a trend where working consumers tend to favour foreign banks as they are considered to be more reliable in providing banking services?

Table 4.14: Consumer Involvement in Searching for Bank's Information

Consumer Involvement	Undergrad (%)	Post-grad (%)	Total (%)
1 Low Involvement	31.2	42.6	35.6
2 Medium Involvement	33.9	26.5	31.1
3 High Involvement	34.9	30.9	33.3

Respondents' involvement in seeking banking information was fairly distributed for each level of involvement namely, low, medium and high involvement. Some consumers are taking banking information seriously, while others do not think alike. Though the findings might not be significant but post-graduate students tend to have lower involvement in searching for banking information. The post-graduates could be receiving banking information from their banks personally since they were considered as important or affluent market segment.

Table 4.15: Ownership, Usage and Familiarity with Electronic Banking

Ownership of Account		Undergrad (%)	Post-grad (%)	Total (%)
1 Bank Account	Yes	100.0	100.0	100.0
2 Savings Account	Yes	100.0	100.0	100.0
3 Current Account	Yes	6.4	67.6	29.8
	No	93.6	32.4	70.2
4 Fixed Deposit	Yes	14.5	57.4	30.2
	No	85.5	42.6	69.1
5 Others	*Yes*	*0.0*	*11.8*	*4.5*
	No	100.0	88.2	95.5
Usage of Electronic Banking Media		**Undergrad (%)**	**Post-grad (%)**	**Total (%)**
1 ATM	Yes	100.0	98.5	99.4
	No	0.0	1.5	0.6
2 Phone banking	Yes	9.1	36.8	19.7
	No	90.9	63.2	80.3
3 PC banking	Yes	0.9	2.9	1.7
	No	99.1	97.1	98.3
Familiarity of Electronic Banking Devices		**Undergrad (%)**	**Post-grad (%)**	**Total (%)**
1 ATM Card	H. Unfamiliar	4.5	10.3	6.7
	Unfamiliar	1.8	0.0	1.1
	Not Sure	1.8	1.5	1.7
	Familiar	44.5	13.2	13.2
	H. Familiar	47.3	75.0	57.9
2 Telephone	H. Unfamiliar	10.9	20.6	14.6
	Unfamiliar	27.3	14.7	22.5
	Not Sure	36.4	29.4	33.7
	Familiar	19.1	25.0	21.3
	H. Familiar	6.4	10.3	7.9
3 Computer	H. Unfamiliar	14.5	29.4	20.2
	Unfamiliar	30.9	29.4	30.3
	Not Sure	36.4	30.9	34.3
	Familiar	15.5	7.4	12.4
	H. Familiar	2.7	2.9	2.8

b) Ownership, Usage and Familiarity with Electronic Banking

The findings seem to indicate that high education was not the only criterion in determining bank account ownership and usage of electronic banking media. The main criterion is actually the income level of consumers, which is considered more important, as proven in the earlier findings. This could be seen from many significant differences where more post-graduate students have different bank accounts like the current, fixed deposit and other accounts than the undergraduate students do (Table 4.15).

In addition, the post-graduate students were more inclined to use electronic banking media especially in using phone and PC banking services. More than one-third of the post-graduate students had experienced using the phone banking facilities compared to a mere 0.9 percent of the undergraduates. Even the common ATM, three quarter of post-graduate students indicated that they were highly familiar with the device compared to less than half of the undergraduates. Probably, the post-graduates have more experience in using the ATMs.

Table 4.16 (next page) identified the most common services utilised by consumers with an ATM were cash withdrawal (98.3 percent), balance enquiry (79.3 percent) and cash or cheques deposit (51.1 percent). The significant difference lies in the other services such as transfer of funds, payment of instalment, request cheque books and shares application where post-graduate students had used once in a while but majority of the undergraduate students had never use them before. These services were catered to higher income group who already had a current account or excess cash to invest in the stock market.

Similarly, the most common services used in a phone banking facility were balance enquiry (15.7 percent), bank information (10.7 percent) and request bank statement (9.6 percent). The post-graduate students used all the services available more often than undergraduate students, except there were no significant difference in application for banker's cheque, foreign exchange enquiry, shares dealing and unit trust investment. Such insignificance in investment purpose is because most banks

do not have shares trading facilities using phone banking except for a few banks that have a security firm like Phileo Allied Bank with Phileo Allied Securities or RHB Bank with RHB Securities.

Table 4.16: Frequency of Usage in Electronic Banking Media

Automated Teller Machine (ATM)		Undergrad (%)	Post-grad (%)	Total (%)
1 Cash withdrawal	Often	45.5	60.3	51.1
	Sometimes	53.6	36.8	47.2
	Never	0.9	2.9	1.7
2 Cash /cheque deposit	Often	2.7	7.4	4.5
	Sometimes	43.6	51.5	46.6
	Never	53.6	41.2	48.9
3 Placement of FD	Often	0.0	0.0	0.0
	Sometimes	25.5	29.4	27.0
	Never	74.5	70.6	73.0
4 Transfer of funds	Often	0.0	5.9	2.2
	Sometimes	23.6	36.8	28.7
	Never	76.4	57.4	69.1
5 Balance enquiry	Often	14.5	26.5	19.1
	Sometimes	60.9	60.3	60.7
	Never	24.5	13.2	20.7
6 Payment of bills	Often	1.8	0.0	1.1
	Sometimes	20.0	32.4	24.7
	Never	78.2	67.6	74.2
7 Payment of instalment	Often	0.9	1.5	1.1
	Sometimes	14.5	39.7	24.2
	Never	84.5	58.8	74.7
8 Share application	Often	0.0	0.0	0.0
	Sometimes	7.3	27.9	15.2
	Never	92.7	72.1	84.8
9 Request cheque book	Often	0.0	0.0	0.0
	Sometimes	10.9	36.8	20.8
	Never	89.1	63.2	79.2
10 Request statement	Often	0.9	0.0	0.6
	Sometimes	23.6	35.3	28.1
	Never	75.5	64.7	71.3

Phone Banking		Undergrad (%)	Post-grad (%)	Total (%)
1 Apply banker's cheque	Often	0.0	0.0	0.0
	Sometimes	1.8	7.4	3.9
	Never	98.2	92.6	96.1
2 Standing instruction	Often	0.0	1.5	0.6
	Sometimes	1.8	11.8	5.6
	Never	98.2	86.8	93.8
3 Transfer of funds	Often	0.0	0.0	0.0
	Sometimes	1.8	13.2	6.2
	Never	98.2	86.8	93.8
4 Balance enquiry	Often	1.8	1.5	1.7
	Sometimes	5.5	27.9	14.0
	Never	92.7	70.9	84.3
5 Payment of bills	Often	0.0	1.5	0.6
	Sometimes	3.6	11.8	6.7
	Never	96.4	86.8	92.7
6 Payment of instalment	Often	0.0	1.5	0.6
	Sometimes	3.6	13.2	7.3
	Never	96.4	85.3	92.1
7 Request cheque book	Often	0.0	1.5	0.6
	Sometimes	1.8	16.2	7.3
	Never	98.2	82.4	92.1
8 Request statement	Often	0.0	2.9	1.1
	Sometimes	4.5	14.7	8.4
	Never	95.5	82.4	90.4
9 Interest enquiry	Often	0.0	0.0	0.0
	Sometimes	4.5	13.2	7.9
	Never	95.5	86.8	92.1
10 Forex enquiry	Often	0.9	1.5	1.1
	Sometimes	3.6	5.9	4.5
	Never	95.5	92.6	94.4
11 Overdraft facility	Often	0.0	0.0	0.0
	Sometimes	0.9	7.4	3.4
	Never	99.1	92.6	96.6
12 Bank information	Often	0.0	0.0	0.0
	Sometimes	5.5	19.1	10.7
	Never	94.5	80.9	89.3

Phone Banking		Undergrad (%)	Post-grad (%)	Total (%)
13 Shares dealing	Often	0.0	0.0	0.0
	Sometimes	1.8	5.9	3.4
	Never	98.2	94.1	96.6
14 Invest Unit Trust	Often	0.0	0.0	0.0
	Sometimes	0.9	4.4	2.2
	Never	99.1	95.6	97.8

PC Banking		Undergrad (%)	Post-grad (%)	Total (%)
1 Apply banker's cheque	Never	100.0	100.0	100.0
2 Standing instruction	Never	100.0	100.0	100.0
3 Transfer of funds	Sometimes	0.9	1.5	1.1
	Never	99.1	98.5	98.9
4 Balance enquiry	Sometimes	0.9	1.5	1.1
	Never	99.1	98.5	98.9
5 Payment of bills	Never	100.0	100.0	100.0
6 Payment of instalment	Never	100.0	100.0	100.0
7 Request cheque book	Sometimes	0.0	1.5	0.6
	Never	100.0	98.5	99.4
8 Request statement	Sometimes	0.0	1.5	0.6
	Never	100.0	98.5	99.4
9 Interest enquiry	Sometimes	0.0	2.9	1.1
	Never	100.0	97.1	98.9
10 Forex enquiry	Sometimes	0.0	2.9	1.1
	Never	100.0	97.1	98.9
11 Overdraft facility	Never	100.0	100.0	100.0
12 Bank information	Sometimes	0.0	1.5	0.6
	Never	100.0	98.5	99.4
13 Shares dealing	Never	100.0	100.0	100.0
14 Invest Unit Trust	Never	100.0	100.0	100.0

Lastly, none of the services available in PC banking had any significant difference between undergraduates and post-graduates. In fact, half of the services could not be compared since none of the respondent had ever used the services before. Nevertheless, the most common services used by the respondents were transfer of funds, balance enquiry, interest rate and foreign exchange rate enquiries.

c) Satisfaction in Using Electronic Banking Media

Consumer satisfaction is defined as the overall attitude consumers have toward a good or service after they have acquired and used it. It is a post-choice evaluative judgment resulting from a specific purchase selection and the experience of using or consuming it (Westbrook and Oliver, 1991). Satisfaction is influenced by consumers' comparison of the quality of the service provided to their expectations for that service. The overall satisfaction with an individual transaction has two direct antecedents: satisfaction with the product outcome itself and satisfaction with the information (Spreng, Mackenzie and Olsharesky, 1996). To be successful, therefore, a company must have the ability to change and be focused on meeting customers needs (Jones, 1997). How do the university students rate the level of satisfaction in using electronic banking media?

Table 4.17: Level of Satisfaction in Using Electronic Banking Media

Electronic Banking Media		Undergrad (%)	Post-grad (%)	Total (%)
1 ATM	Exceeds	18.2	14.7	16.9
	Meets	75.5	77.9	76.4
	Below	6.4	7.4	6.7
	No experience	0.0	0.0	0.0
2 Phone banking	Exceeds	0.0	0.0	0.0
	Meets	6.4	26.5	14.0
	Below	2.7	10.3	5.6
	No experience	90.9	63.2	80.3
3 PC banking	Exceeds	0.0	0.0	0.0
	Meets	0.9	1.5	1.1
	Below	0.0	1.5	0.6
	No experience	99.1	97.1	98.3

Using categorical scale, we could identify several trends in consumer satisfaction among the different electronic banking media (Table 4.17). Consumers in general believed that ATM had met their expectations (76.4 percent) and for some, far exceeding their expectations. Although most of the phone banking users believed to be satisfied, others said it was below satisfaction. The level of satisfaction on PC banking could not be identified since 98.3 percent of the respondents do not have any experience. Among the few users of PC banking, similar results with the phone banking were found where they believed it had either met their expectations or below their expectations.

These trends explained to us that Malaysians were more satisfied with the ATMs compared to phone or PC banking. This could due to the very basic need of banking is to deposit and withdraw money that could not be met by phone or PC banking services. Furthermore, most of the local providers of phone and PC banking have yet to develop a full range of banking and financial services to the consumers. Currently, limited services are made available.

In conclusion, the above analysis clearly outlined that there was a significant difference in banking behaviour among the undergraduate and post-graduate students in relation to banking awareness, involvement, ownership, usage and satisfaction in electronic banking media. Though education level usually correlates with social status but the latter is more important in determining consumers' banking behaviour.

4.4.2 Consumer Perception On Electronic Banking

Consumer perception is the process through which individuals are exposed to information, attend to that information and comprehend it (Mowen and Minor, 1998). In the initial exposure stage, consumers receive information through their senses. Then, in the attention stage, they allocate processing capacity to a stimulus. Finally, in the comprehension stage, they organize and interpret the information in order to

obtain meaning from it. Comprehension is the process of making sense of stimuli so they may be understood.

a) Benefits of Electronic Banking

Table 4.18 summarised the opinion of consumers in electronic banking as perceived as very useful (μ=3.85), very easy to use (μ=3.79), flexible in time (μ=3.76) and convenience of location (μ=3.68). This is in line with the objective and purpose of launching the electronic banking services in Malaysia and worldwide. Teoh (1998) also found that bank's innovativeness, time-savings, efficiency and convenience as important factors for using cyber-banking. On the other spectrum, it is also the concern of consumers on perceived risks on electronic banking such as low in security (μ=2.95) and less private (μ=3.06).

b) Weaknesses of Electronic Banking

The perceived disadvantage of electronic banking was also reflected in the subsequent findings. The respondents had informed that the major reasons for not using electronic banking include being fearful of system breakdown (μ=3.73), a lack of trust in unseen electronic transaction (μ=3.41), a lack of security (μ=3.37) and a lack of privacy (μ=3.33). Findings by Chaudhuri (1997) suggested that emotional factors account for a significant and substantial portion of the variance in perceived risk even greater of other factors are taken into account. He also found that perceived risk mediates the effect of negative emotion and perceived differences on brand loyalty and information search. In this aspect, both the government and corporate bankers should come together to discuss ways to reduce such perceived risk of unauthorised access by computer hackers through stringent regulations or security features.

Table 4.18: Consumer Perception on Electronic Banking (By All Respondents & Gender)

Benefits of Electronic Banking	Male (mean)	Female (mean)	All Resp (mean)	2-tail Signif.	Decision
1 Very useful	3.76	3.93	3.85	0.309	Not Significant
2 Very reliable	3.27	3.31	3.29	0.786	Not Significant
3 Very secure	3.05	2.87	2.95	0.197	Not Significant
4 Very private	3.03	3.08	3.06	0.744	Not Significant
5 Very convenient (place)	3.62	3.73	3.68	0.532	Not Significant
6 Very flexible (time)	3.68	3.83	3.76	0.384	Not Significant
7 Very efficient	3.32	3.48	3.41	0.295	Not Significant
8 Very cost effective	3.27	3.44	3.37	0.254	Not Significant
9 Very easy to use	3.73	3.83	3.79	0.534	Not Significant
10 Very personalised	3.36	3.44	3.40	0.614	Not Significant
11 Very prestigious	3.19	3.01	3.09	0.203	Not Significant
12 Very innovative	3.42	3.53	3.48	0.477	Not Significant
Reasons for Not Using Electronic Banking	**Male (mean)**	**Female (mean)**	**All Resp (mean)**	**2-tail Signif.**	**Decision**
1 Risk of losing PIN	3.09	3.35	3.24	0.211	Not Significant
2 Time consuming	2.87	2.95	2.91	0.625	Not Significant
3 Lack of security	3.24	3.46	3.37	0.191	Not Significant
4 Lack of privacy	3.18	3.43	3.33	0.140	Not Significant
5 Lack of trust	3.29	3.49	3.41	0.234	Not Significant
6 System breakdown	3.57	3.86	3.73	0.076	Not Significant
7 Limited services	3.24	3.34	3.30	0.499	Not Significant
8 No personal attention	3.13	3.12	3.13	0.950	Not Significant

Reasons for Not Using Electronic Banking	Male (mean)	Female (mean)	All Resp (mean)	2-tail Signif.	Decision
9 Difficult to use	2.91	2.87	2.89	0.789	Not Significant
10 High cost of computer	2.91	3.12	3.03	0.258	Not Significant
11 No time to learn	2.82	2.88	2.85	0.727	Not Significant
12 Embarrass to ask	2.58	2.59	2.58	0.968	Not Significant
13 Don't know how to use	2.82	3.05	2.95	0.190	Not Significant
14 Afraid of Y2K problem	2.82	2.95	2.89	0.452	Not Significant
15 Don't need them	2.72	2.56	2.63	0.756	Not Significant
Importance of Electronic Banking	**Male (mean)**	**Female (mean)**	**All Resp (mean)**	**2-tail Signif.**	**Decision**
1 ATM	4.36	4.09	4.21	0.172	Not Significant
2 Phone banking	3.79	3.56	3.66	0.173	Not Significant
3 PC banking	3.69	3.54	3.61	0.366	Not Significant
Future Usage of Electronic Banking	**Male (mean)**	**Female (mean)**	**All Resp (mean)**	**2-tail Signif.**	**Decision**
1 ATM	4.50	4.34	4.41	0.309	Not Significant
2 Phone banking	3.99	3.78	3.87	0.152	Not Significant
3 PC banking	4.06	3.81	3.92	0.085	Not Significant

c) Importance and Future Usage of Electronic Banking

In spite of the perceived risks in electronic banking, the benefits actually outweighted the weaknesses. The Malaysian consumers still emphasize the importance of all the electronic banking media especially the ATMs (μ=4.21). They in fact had rated highly on the possibility of them using the various electronic delivery channels. The surprising outcome was they had rated ATMs as the most likely to be used (μ=4.41) followed by PC banking (μ=3.92) and not phone banking (μ=3.87). This

forecast seems to tell us that in the future, PC banking will be more important to the consumers than phone banking and not the other way a round as expected. If technology continues to improve with more product and security features available in a computer, surely the computer will be an important part of consumers' lives in the future.

d) Perception on Electronic Banking Among Different Demographic Variables

To test the differences in consumer perception on electronic banking in relation to various demographic variables, the second hypothesis to be analysed is:

(H2) There are significant differences in consumer perception on electronic banking among consumers of differing gender, ethnic groups, age groups, marital status, educational levels, field of study, income levels, occupational levels and occupational types.

The respondents did not differ much in their perception on electronic banking. This is especially true where there is totally no significant difference between the two gender groups (Table 4.18). Hence, both male and female students share similar perception on electronic banking. However, the other demographic variables had shown some level of significant difference in their perception on electronic banking.

For instance, the Malays and "other" ethnic groups tend to rate electronic banking as very prestigious compared to the Chinese or Indians (Table 4.19). This could be the Malay and Bumiputera students in general are from the lower income group and thus, using phone or PC banking reflects a higher social status. They also expressed that the reasons for not using electronic banking were the perceived risk of losing the PIN and no personal attention. This reflects the Malay society that values personal attention in any social or business dealings.

Table 4.19: Consumer Perception on Electronic Banking (By Ethnic Group)

Benefits of Electronic Banking	Malay (mean)	Chinese (mean)	Indian (mean)	Others (mean)	F Prob.	Decision
1 Very useful	3.89	3.98	3.45	3.89	0.173	Not Sig.
2 Very reliable	3.46	3.28	2.90	3.67	0.052	Not Sig.
3 Very secure	3.02	2.96	2.71	3.22	0.369	Not Sig.
4 Very private	3.16	3.05	2.71	3.67	0.094	Not Sig.
5 Very convenient (place)	3.42	3.86	3.71	3.56	0.203	Not Sig.
6 Very flexible (time)	3.65	3.93	3.65	3.44	0.356	Not Sig.
7 Very efficient	3.47	3.42	3.19	3.67	0.524	Not Sig.
8 Very cost effective	3.26	3.42	3.13	3.67	0.206	Not Sig.
9 Very easy to use	3.88	3.78	3.58	4.00	0.579	Not Sig.
10 Very personalised	3.46	3.35	3.39	3.67	0.818	Not Sig.
11 Very prestigious	3.32	2.96	2.87	3.56	0.035	Significant
12 Very innovative	3.63	3.53	3.10	3.44	0.103	Not Sig.
Reasons for Not Using Electronic Banking	**Malay (mean)**	**Chinese (mean)**	**Indian (mean)**	**Others (mean)**	**F Prob.**	**Decision**
1 Risk of losing PIN	3.50	3.17	2.77	4.00	0.045	Significant
2 Time consuming	3.05	2.90	2.48	3.86	0.010	Significant
3 Lack of security	3.33	3.44	3.06	4.29	0.063	Not Sig.
4 Lack of privacy	3.34	3.31	3.23	3.86	0.601	Not Sig.
5 Lack of trust	3.52	3.37	3.19	3.86	0.420	Not Sig.
6 System breakdown	3.77	3.64	3.74	4.43	0.321	Not Sig.
7 Limited services	3.48	3.14	3.26	3.86	0.115	Not Sig.
8 No personal attention	3.39	3.04	2.68	4.00	0.002	Significant

Reasons for Not Using Electronic Banking	Malay (mean)	Chinese (mean)	Indian (mean)	Others (mean)	F Prob.	Decision
9 Difficult to use	3.11	2.85	2.55	3.00	0.069	Not Sig.
10 High cost of computer	3.34	2.86	2.90	3.00	0.150	Not Sig.
11 No time to learn	3.02	2.88	2.58	2.43	0.299	Not Sig.
12 Embarrass to ask	2.82	2.47	2.52	2.29	0.258	Not Sig.
13 Don't know how to use	3.02	3.04	2.77	2.14	0.199	Not Sig.
14 Afraid of Y2K problem	2.96	2.86	2.90	2.86	0.943	Not Sig.
15 Don't need them	2.46	2.85	2.55	1.17	0.030	Significant
Importance of Electronic Banking	**Malay (mean)**	**Chinese (mean)**	**Indian (mean)**	**Others (mean)**	**F Prob.**	**Decision**
1 ATM	4.18	4.22	4.29	4.00	0.941	Not Sig.
2 Phone banking	3.63	3.62	3.74	4.00	0.778	Not Sig.
3 PC banking	3.70	3.51	3.58	4.00	0.530	Not Sig.
Future Usage of Electronic Banking	**Malay (mean)**	**Chinese (mean)**	**Indian (mean)**	**Others (mean)**	**F Prob.**	**Decision**
1 ATM	4.54	4.37	4.35	4.11	0.598	Not Sig.
2 Phone banking	3.91	3.88	3.71	4.11	0.673	Not Sig.
3 PC banking	3.98	3.86	3.90	4.11	0.084	Not Sig.

Table 4.20: Consumer Perception on Electronic Banking (By Age Group)

Benefits of Electronic Banking	<20 (mean)	21-25 (mean)	26-30 (mean)	31-35 (mean)	36-40 (mean)	>41 (mean)	F Prob	Decision
1 Very useful	3.33	3.78	4.00	4.23	4.00	2.50	0.040	Significant
2 Very reliable	2.94	3.32	3.39	3.46	2.60	2.50	0.204	Not Sig.
3 Very secure	2.72	2.94	3.03	3.09	2.80	1.50	0.217	Not Sig.
4 Very private	2.89	3.09	3.19	3.06	2.80	1.50	0.391	Not Sig.
5 Very convenient (place)	3.39	3.56	3.87	4.11	2.80	2.50	0.039	Significant
6 Very flexible (time)	3.50	3.74	3.81	4.03	3.40	2.50	0.325	Not Sig.
7 Very efficient	3.17	3.40	3.42	3.77	2.80	1.50	0.011	Significant
8 Very cost effective	3.28	3.34	3.45	3.60	2.80	1.50	0.048	Significant
9 Very easy to use	3.39	3.82	3.81	3.89	4.20	2.50	0.240	Not Sig.
10 Very personalised	3.39	3.44	3.65	3.29	3.00	1.50	0.098	Not Sig.
11 Very prestigious	3.06	3.18	3.10	3.06	2.60	1.00	0.035	Significant
12 Very innovative	3.17	3.49	3.52	3.71	3.00	2.50	0.232	Not Sig.
Reasons for Not Using Electronic Banking	**<20 (mean)**	**21-25 (mean)**	**26-30 (mean)**	**31-35 (mean)**	**36-40 (mean)**	**>41 (mean)**	**F Prob**	**Decision**
1 Risk of losing PIN	2.78	3.41	3.00	3.15	4.20	3.00	0.229	Not Sig.
2 Time consuming	2.94	3.11	2.58	2.79	3.00	2.00	0.188	Not Sig.
3 Lack of security	3.22	3.35	3.42	3.32	3.80	3.50	0.951	Not Sig.
4 Lack of privacy	3.50	3.40	3.26	3.12	3.20	3.50	0.826	Not Sig.
5 Lack of trust	3.56	3.45	3.13	3.38	3.80	3.50	0.723	Not Sig.
6 System breakdown	3.50	3.87	3.68	3.59	3.80	3.00	0.600	Not Sig.
7 Limited services	3.33	3.35	3.45	3.18	2.40	2.50	0.276	Not Sig.
8 No personal attention	3.22	3.28	3.06	2.68	3.80	2.50	0.062	Not Sig.

Reasons for Not Using Electronic Banking	<20 (mean)	21-25 (mean)	26-30 (mean)	31-35 (mean)	36-40 (mean)	>41 (mean)	F Prob	Decision
9 Difficult to use	2.83	2.88	2.81	2.97	3.00	3.00	0.982	Not Sig.
10 High cost of computer	3.11	3.19	2.71	2.85	3.80	2.00	0.179	Not Sig.
11 No time to learn	2.89	2.95	2.35	2.97	3.20	2.50	0.219	Not Sig.
12 Embarrass to ask	2.61	2.57	2.42	2.65	3.00	3.50	0.727	Not Sig.
13 Don't know how to use	3.33	3.04	2.48	3.00	2.60	3.00	0.172	Not Sig.
14 Afraid of Y2K problem	2.89	2.98	2.55	2.85	3.40	4.00	0.314	Not Sig.
15 Don't need them	2.56	2.40	2.45	3.26	3.00	3.50	0.005	Significant
Importance of Electronic Banking	**<20 (mean)**	**21-25 (mean)**	**26-30 (mean)**	**31-35 (mean)**	**36-40 (mean)**	**>41 (mean)**	**F Prob**	**Decision**
1 ATM	4.56	4.07	4.03	4.71	4.00	1.00	0.001	Significant
2 Phone banking	3.94	3.58	3.42	4.06	3.60	1.00	0.002	Significant
3 PC banking	4.00	3.55	3.52	3.74	3.40	1.00	0.012	Significant
Future Usage of Electronic Banking	**<20 (mean)**	**21-25 (mean)**	**26-30 (mean)**	**31-35 (mean)**	**36-40 (mean)**	**>41 (mean)**	**F Prob**	**Decision**
1 ATM	4.44	4.40	4.39	4.54	4.40	3.00	0.518	Not Sig.
2 Phone banking	3.72	3.86	3.90	4.14	3.00	2.50	0.041	Significant
3 PC banking	3.89	3.96	3.94	4.00	3.20	2.50	0.199	Not Sig.

Table 4.21: Consumer Perception on Electronic Banking (By Marital Status)

1 Very useful	3.74	4.33	4.07	4.00	0.132	Not Sig.
2 Very reliable	3.23	3.50	3.44	4.00	0.475	Not Sig.
3 Very secure	2.89	3.17	3.07	3.00	0.587	Not Sig.
4 Very private	3.08	3.11	2.89	3.00	0.862	Not Sig.
5 Very convenient (place)	3.62	4.06	3.70	4.00	0.550	Not Sig.
6 Very flexible (time)	3.70	3.94	3.96	4.00	0.625	Not Sig.
7 Very efficient	3.37	3.56	3.48	4.00	0.791	Not Sig.
8 Very cost effective	3.38	3.39	3.26	4.00	0.862	Not Sig.
9 Very easy to use	3.71	4.11	3.93	4.00	0.412	Not Sig.
10 Very personalised	3.40	3.44	3.37	4.00	0.947	Not Sig.
11 Very prestigious	3.06	3.22	3.11	4.00	0.705	Not Sig.
12 Very innovative	3.43	3.56	3.67	4.00	0.653	Not Sig.
1 Risk of losing PIN	3.21	2.83	3.67	n/a	0.117	Not Sig.
2 Time consuming	2.94	2.50	3.07	n/a	0.193	Not Sig.
3 Lack of security	3.33	2.94	3.81	n/a	0.033	Significant
4 Lack of privacy	3.36	2.67	3.59	n/a	0.017	Significant
5 Lack of trust	3.41	2.89	3.74	n/a	0.046	Significant
6 System breakdown	3.71	3.67	3.89	n/a	0.708	Not Sig.
7 Limited services	3.26	3.56	3.30	n/a	0.528	Not Sig.
8 No personal attention	3.11	3.11	3.22	n/a	0.881	Not Sig.

9 Difficult to use	2.89	3.00	3.04	n/a	0.539	Not Sig.
10 High cost of computer	3.01	3.06	3.11	n/a	0.921	Not Sig.
11 No time to learn	2.84	2.89	2.89	n/a	0.970	Not Sig.
12 Embarrass to ask	2.55	2.39	2.89	n/a	0.255	Not Sig.
13 Don't know how to use	3.01	2.89	2.70	n/a	0.461	Not Sig.
14 Afraid of Y2K problem	2.88	2.50	3.19	n/a	0.152	Not Sig.
15 Don't need them	2.55	3.00	2.74	n/a	0.261	Not Sig.
1 ATM	4.11	4.61	4.44	4.00	0.328	Not Sig.
2 Phone banking	3.53	3.78	4.22	4.00	0.034	Significant
3 PC banking	3.52	3.56	4.07	4.00	0.119	Not Sig.
1 ATM	4.37	4.72	4.37	5.00	0.541	Not Sig.
2 Phone banking	3.80	4.06	4.04	5.00	0.317	Not Sig.
3 PC banking	3.87	4.06	4.04	5.00	0.519	Not Sig.

Note: n/a = "not applicable"

Table 4.22: Consumer Perception on Electronic Banking (By Education Level)

Benefits of Electronic Banking	Undergrad (mean)	Post-grad (mean)	2-tail Signif.	Decision
1 Very useful	3.73	4.06	0.056	Not Significant
2 Very reliable	3.24	3.38	0.340	Not Significant
3 Very secure	2.92	3.00	0.569	Not Significant
4 Very private	3.05	3.06	0.980	Not Significant
5 Very convenient (place)	3.49	3.99	0.008	Significant
6 Very flexible (time)	3.64	3.97	0.057	Not Significant
7 Very efficient	3.34	3.53	0.214	Not Significant
8 Very cost effective	3.25	3.54	0.058	Not Significant
9 Very easy to use	3.77	3.81	0.825	Not Significant
10 Very personalised	3.45	3.34	0.514	Not Significant
11 Very prestigious	3.16	2.97	0.187	Not Significant
12 Very innovative	3.41	3.60	0.206	Not Significant
Reasons for Not Using Electronic Banking	**Undergrad (mean)**	**Post-grad (mean)**	**2-tail Signif.**	**Decision**
1 Risk of losing PIN	3.28	3.17	0.583	Not Significant
2 Time consuming	3.07	2.65	0.012	Significant
3 Lack of security	3.37	3.36	0.985	Not Significant
4 Lack of privacy	3.41	3.18	0.183	Not Significant
5 Lack of trust	3.45	3.33	0.511	Not Significant
6 System breakdown	3.78	3.65	0.449	Not Significant
7 Limited services	3.37	3.18	0.250	Not Significant
8 No personal attention	3.25	2.92	0.054	Not Significant

Reasons for Not Using Electronic Banking	Undergrad (mean)	Post-grad (mean)	2-tail Signif.	Decision
9 Difficult to use	2.94	2.79	0.294	Not Significant
10 High cost of computer	3.17	2.79	0.044	Significant
11 No time to learn	2.83	2.88	0.812	Not Significant
12 Embarrass to ask	2.59	2.58	0.940	Not Significant
13 Don't know how to use	3.00	2.86	0.457	Not Significant
14 Afraid of Y2K problem	2.94	2.80	0.435	Not Significant
15 Don't need them	2.44	2.94	0.005	Significant
Importance of Electronic Banking	**Undergrad (mean)**	**Post-grad (mean)**	**2-tail Signif.**	**Decision**
1 ATM	4.14	4.32	0.352	Not Significant
2 Phone banking	3.65	3.68	0.901	Not Significant
3 PC banking	3.65	3.53	0.467	Not Significant
Future Usage of Electronic Banking	**Undergrad (mean)**	**Post-grad (mean)**	**2-tail Signif.**	**Decision**
1 ATM	4.40	4.43	0.869	Not Significant
2 Phone banking	3.82	3.96	0.352	Not Significant
3 PC banking	3.93	3.91	0.918	Not Significant

Table 4.23: Consumer Perception on Electronic Banking (By Field of Study)

Benefits of Electronic Banking	Arts (mean)	Science (mean)	2-tail Signif.	Decision
1 Very useful	3.93	3.64	0.140	Not Significant
2 Very reliable	3.35	3.11	0.168	Not Significant
3 Very secure	2.97	2.89	0.605	Not Significant
4 Very private	3.07	3.00	0.697	Not Significant
5 Very convenient (place)	3.78	3.36	0.045	Significant
6 Very flexible (time)	3.81	3.61	0.315	Not Significant
7 Very efficient	3.45	3.30	0.385	Not Significant
8 Very cost effective	3.40	3.30	0.375	Not Significant
9 Very easy to use	3.79	3.77	0.921	Not Significant
10 Very personalised	3.40	3.43	0.844	Not Significant
11 Very prestigious	3.04	3.25	0.197	Not Significant
12 Very innovative	3.53	3.34	0.275	Not Significant
Reasons for Not Using Electronic Banking	**Arts (mean)**	**Science (mean)**	**2-tail Signif.**	**Decision**
1 Risk of losing PIN	3.30	3.07	0.337	Not Significant
2 Time consuming	2.95	3.82	0.497	Not Significant
3 Lack of security	3.41	3.23	0.354	Not Significant
4 Lack of privacy	3.32	3.34	0.917	Not Significant
5 Lack of trust	3.39	3.45	0.741	Not Significant
6 System breakdown	3.76	3.64	0.503	Not Significant
7 Limited services	3.30	3.30	0.990	Not Significant
8 No personal attention	3.08	3.27	0.296	Not Significant

Reasons for Not Using Electronic Banking	Arts (mean)	Science (mean)	2-tail Signif.	Decision
9 Difficult to use	2.88	2.91	0.852	Not Significant
10 High cost of computer	3.05	2.98	0.851	Not Significant
11 No time to learn	2.94	2.59	0.090	Not Significant
12 Embarrass to ask	2.66	2.36	0.131	Not Significant
13 Don't know how to use	2.94	2.98	0.852	Not Significant
14 Afraid of Y2K problem	2.88	2.93	0.791	Not Significant
15 Don't need them	2.62	2.66	0.839	Not Significant
Importance of Electronic Banking	**Arts (mean)**	**Science (mean)**	**2-tail Signif.**	**Decision**
1 ATM	4.13	4.45	0.147	Not Significant
2 Phone banking	3.63	3.75	0.561	Not Significant
3 PC banking	3.57	3.73	0.408	Not Significant
Future Usage of Electronic Banking	**Arts (mean)**	**Science (mean)**	**2-tail Signif.**	**Decision**
1 ATM	4.40	4.43	0.874	Not Significant
2 Phone banking	3.90	3.80	0.549	Not Significant
3 PC banking	3.91	3.95	0.796	Not Significant

Table 4.24: Consumer Perception on Electronic Banking (By Income Group)

Benefits of Electronic Banking	<1K (mean)	1K-3K (mean)	3K-5K (mean)	>5K (mean)	F Prob.	Decision
1 Very useful	3.70	3.93	4.00	4.45	0.040	Significant
2 Very reliable	3.24	3.22	3.28	3.70	0.281	Not Sig.
3 Very secure	2.92	2.81	2.84	3.40	0.128	Not Sig.
4 Very private	3.07	2.93	2.92	3.35	0.537	Not Sig.
5 Very convenient (place)	3.50	3.74	4.00	4.20	0.050	Significant
6 Very flexible (time)	3.65	3.78	4.00	4.12	0.214	Not Sig.
7 Very efficient	3.35	3.26	3.56	3.80	0.210	Not Sig.
8 Very cost effective	3.33	3.11	3.56	3.70	0.160	Not Sig.
9 Very easy to use	3.71	3.81	4.00	3.95	0.569	Not Sig.
10 Very personalised	3.40	3.44	3.52	3.30	0.915	Not Sig.
11 Very prestigious	3.12	2.93	3.04	3.25	0.667	Not Sig.
12 Very innovative	3.38	3.63	3.64	3.70	0.351	Not Sig.
Reasons for Not Using Electronic Banking	**<1K (mean)**	**1K-3K (mean)**	**3K-5K (mean)**	**>5K (mean)**	**F Prob.**	**Decision**
1 Risk of losing PIN	3.27	3.00	3.29	3.40	0.759	Not Sig.
2 Time consuming	3.07	2.44	2.67	3.05	0.032	Significant
3 Lack of security	3.36	3.11	3.54	3.50	0.539	Not Sig.
4 Lack of privacy	3.43	3.07	3.13	3.40	0.378	Not Sig.
5 Lack of trust	3.45	3.19	3.33	3.55	0.668	Not Sig.
6 System breakdown	3.79	3.74	3.63	3.60	0.855	Not Sig.
7 Limited services	3.34	3.52	3.33	2.80	0.105	Not Sig.
8 No personal attention	3.22	3.30	2.96	2.60	0.076	Not Sig.

Reasons for Not Using Electronic Banking	<1K (mean)	1K-3K (mean)	3K-5K (mean)	>5K (mean)	F Prob.	Decision
9 Difficult to use	2.87	3.15	2.79	2.70	0.393	Not Sig.
10 High cost of computer	3.11	3.59	2.42	2.55	0.002	Significant
11 No time to learn	2.87	2.81	2.50	3.15	0.327	Not Sig.
12 Embarrass to ask	2.60	2.37	2.58	2.75	0.694	Not Sig.
13 Don't know how to use	3.04	2.96	2.79	2.70	0.588	Not Sig.
14 Afraid of Y2K problem	2.89	3.00	2.92	2.75	0.912	Not Sig.
15 Don't need them	2.44	2.89	3.00	2.85	0.056	Not Sig.
Importance of Electronic Banking	**<1K (mean)**	**1K-3K (mean)**	**3K-5K (mean)**	**>5K (mean)**	**F Prob.**	**Decision**
1 ATM	4.11	4.26	4.28	4.50	0.648	Not Sig.
2 Phone banking	3.62	3.56	3.72	3.95	0.638	Not Sig.
3 PC banking	3.61	3.59	3.52	3.85	0.777	Not Sig.
Future Usage of Electronic Banking	**<1K (mean)**	**1K-3K (mean)**	**3K-5K (mean)**	**>5K (mean)**	**F Prob.**	**Decision**
1 ATM	4.37	4.56	4.44	4.40	0.877	Not Sig.
2 Phone banking	3.82	3.81	4.08	4.00	0.586	Not Sig.
3 PC banking	3.94	3.85	4.04	3.90	0.912	Not Sig.

Table 4.25: Consumer Perception on Electronic Banking (By Occupational Level)

Benefits of Electronic Banking	Manager (mean)	Exec (mean)	Officer (mean)	Others (mean)	F Prob.	Decision
1 Very useful	4.30	3.81	3.67	4.09	0.215	Not Sig.
2 Very reliable	3.53	3.38	2.89	3.35	0.343	Not Sig.
3 Very secure	3.13	2.94	3.00	2.87	0.780	Not Sig.
4 Very private	3.13	3.00	3.11	2.91	0.868	Not Sig.
5 Very convenient (place)	4.20	3.81	3.67	3.74	0.360	Not Sig.
6 Very flexible (time)	4.23	3.69	3.89	3.74	0.270	Not Sig.
7 Very efficient	3.73	3.25	3.67	3.26	0.189	Not Sig.
8 Very cost effective	3.73	3.50	3.44	2.91	0.018	Significant
9 Very easy to use	3.97	3.81	3.67	3.83	0.860	Not Sig.
10 Very personalised	3.33	3.31	3.56	3.39	0.937	Not Sig.
11 Very prestigious	3.07	3.00	3.11	2.96	0.978	Not Sig.
12 Very innovative	3.33	3.25	3.78	3.61	0.407	Not Sig.
Reasons for Not Using Electronic Banking	**Manager (mean)**	**Exec (mean)**	**Officer (mean)**	**Others (mean)**	**F Prob.**	**Decision**
1 Risk of losing PIN	3.31	3.25	3.56	2.82	0.476	Not Sig.
2 Time consuming	2.97	2.69	2.33	2.45	0.205	Not Sig.
3 Lack of security	3.59	3.44	3.22	3.14	0.540	Not Sig.
4 Lack of privacy	3.41	3.31	3.00	2.95	0.466	Not Sig.
5 Lack of trust	3.62	3.38	3.22	3.09	0.465	Not Sig.
6 System breakdown	3.55	3.56	4.56	3.59	0.056	Not Sig.
7 Limited services	3.03	3.19	3.78	3.50	0.191	Not Sig.
8 No personal attention	2.79	2.75	3.56	3.32	0.137	Not Sig.

Reasons for Not Using Electronic Banking	Manager (mean)	Exec (mean)	Officer (mean)	Others (mean)	F Prob.	Decision
9 Difficult to use	2.72	2.88	3.11	3.27	0.182	Not Sig.
10 High cost of computer	2.45	2.94	3.33	3.41	0.038	Significant
11 No time to learn	3.00	2.56	3.11	2.55	0.312	Not Sig.
12 Embarrass to ask	2.79	2.38	2.67	2.45	0.534	Not Sig.
13 Don't know how to use	2.86	2.75	3.00	2.68	0.895	Not Sig.
14 Afraid of Y2K problem	2.90	2.94	3.11	2.64	0.672	Not Sig.
15 Don't need them	3.21	2.94	3.00	2.41	0.114	Not Sig.
Importance of Electronic Banking	**Manager (mean)**	**Exec (mean)**	**Officer (mean)**	**Others (mean)**	**F Prob.**	**Decision**
1 ATM	4.47	3.50	4.78	4.52	0.025	Significant
2 Phone banking	3.83	3.38	4.22	3.61	0.295	Not Sig.
3 PC banking	3.70	3.31	4.11	3.48	0.294	Not Sig.
Future Usage of Electronic Banking	**Manager (mean)**	**Exec (mean)**	**Officer (mean)**	**Others (mean)**	**F Prob.**	**Decision**
1 ATM	4.53	3.94	4.89	4.48	0.214	Not Sig.
2 Phone banking	4.03	3.75	4.33	3.78	0.452	Not Sig.
3 PC banking	3.97	3.63	4.33	3.87	0.444	Not Sig.

Table 4.26: Consumer Perception on Electronic Banking (By Occupational Type)

Benefits of Electronic Banking	Acct (m)	HRM (m)	Sales (m)	OP (m)	Eng (m)	Comp (m)	R&D (m)	Other (m)	F Prob	Decision
1 Very useful	3.60	4.25	4.20	3.90	4.17	4.60	4.14	4.05	0.703	Not Sig.
2 Very reliable	3.40	3.25	3.53	3.30	3.50	3.40	3.14	3.33	0.993	Not Sig.
3 Very secure	3.10	2.50	3.13	2.80	3.50	3.20	2.71	2.95	0.722	Not Sig.
4 Very private	3.00	2.00	3.27	3.00	3.33	3.40	3.29	2.86	0.353	Not Sig.
5 Very convenient	3.70	3.75	4.13	3.80	4.00	4.80	4.57	3.52	0.199	Not Sig.
6 Very flexible (time)	3.60	4.00	4.13	4.00	3.67	5.00	4.14	3.67	0.300	Not Sig.
7 Very efficient	3.40	2.75	3.60	3.33	4.00	4.60	3.57	3.24	0.050	Signif.
8 Very cost effective	3.10	3.00	3.87	3.50	4.00	4.00	3.57	2.90	0.023	Signif.
9 Very easy to use	3.50	3.50	4.07	3.80	4.00	4.60	3.86	3.76	0.576	Not Sig.
10 Very personalised	3.00	2.25	3.47	3.60	3.67	3.80	3.86	3.24	0.135	Not Sig.
11 Very prestigious	3.20	2.00	3.20	2.90	3.67	3.20	2.86	2.90	0.432	Not Sig.
12 Very innovative	3.50	3.50	3.67	3.40	3.67	3.60	4.14	3.52	0.897	Not Sig.
Reasons Not Using Electronic Banking	**Acct (m)**	**HRM (m)**	**Sales (m)**	**OP (m)**	**Eng (m)**	**Comp (m)**	**R&D (m)**	**Other (m)**	**F Prob**	**Decision**
1 Risk of losing PIN	3.10	3.50	3.43	3.00	3.17	3.80	3.57	2.80	0.789	Not Sig.
2 Time consuming	2.50	3.25	2.86	2.80	2.67	2.40	2.71	2.55	0.899	Not Sig.
3 Lack of security	3.20	4.00	3.50	3.80	3.17	2.80	3.57	3.20	0.649	Not Sig.
4 Lack of privacy	3.30	4.00	3.14	3.10	3.33	3.00	3.57	3.00	0.802	Not Sig.
5 Lack of trust	3.10	4.00	3.64	3.50	2.83	3.40	3.71	3.15	0.687	Not Sig.
6 System breakdown	3.70	3.50	3.36	4.20	3.83	4.20	3.00	3.75	0.274	Not Sig.
7 Limited services	3.10	3.25	2.79	3.70	3.17	3.40	3.00	3.65	0.318	Not Sig.
8 No personal attn.	3.10	2.75	2.71	3.20	3.33	2.20	2.57	3.45	0.296	Not Sig.

Reasons Not Using Electronic Banking	Acct (m)	HRM (m)	Sales (m)	OP (m)	Eng (m)	Comp (m)	R&D (m)	Other (m)	F Prob	Decision
9 Difficult to use	3.10	3.50	2.79	2.50	2.67	2.60	2.57	3.45	0.062	Not Sig.
10 High cost of comp.	3.20	2.50	2.71	3.10	1.67	3.20	2.00	3.60	0.011	Signif.
11 No time to learn	2.50	3.75	2.50	3.30	2.33	2.40	4.14	2.45	0.002	Signif.
12 Embarrass to ask	2.70	3.25	2.64	2.60	2.00	2.80	2.14	2.65	0.639	Not Sig.
13 Don't know how	2.70	3.25	2.86	3.20	2.33	2.00	3.57	2.60	0.237	Not Sig.
14 Afraid of Y2K prob.	3.20	3.50	3.28	2.90	2.33	2.20	2.14	2.80	0.118	Not Sig.
15 Don't need them	3.10	2.75	3.00	3.40	2.50	2.20	3.43	2.60	0.388	Not Sig.
Importance of Electronic Banking	**Acct (m)**	**HRM (m)**	**Sales (m)**	**OP (m)**	**Eng (m)**	**Comp (m)**	**R&D (m)**	**Other (m)**	**F Prob**	**Decision**
1 ATM	4.00	4.00	4.47	4.40	3.33	5.00	4.57	4.43	0.462	Not Sig.
2 Phone banking	3.60	3.25	4.07	3.90	3.17	3.80	3.57	3.71	0.796	Not Sig.
3 PC banking	3.80	3.25	4.00	3.50	3.00	3.60	3.43	3.57	0.675	Not Sig.
Future Usage of Electronic Banking	**Acct (m)**	**HRM (m)**	**Sales (m)**	**OP (m)**	**Eng (m)**	**Comp (m)**	**R&D (m)**	**Other (m)**	**F Prob**	**Decision**
1 ATM	4.20	4.00	4.20	4.50	4.83	5.00	4.86	4.38	0.747	Not Sig.
2 Phone banking	3.90	4.00	4.00	3.80	4.50	4.00	4.00	3.76	0.917	Not Sig.
3 PC banking	3.90	4.00	4.07	3.50	4.17	4.00	4.14	3.81	0.915	Not Sig.

The age factor once again played an important role in determining the consumer perception, just like it did in the earlier analysis of banking behaviour (Table 4.20). Consumers in their early thirties gave a thumb-up for electronic banking stating that it was very useful (μ=4.23), convenience of location (μ=4.11), very efficient (μ=3.77) and cost effective (μ=3.60) but those above 41 years of age saw it differently with low rating between μ=1.50 and μ=2.50. This can be explained when the senior respondents claimed that they do not need electronic banking (μ=3.50) compared to the other age groups. The question on the importance of electronic banking attracted a different age group when the youngest respondents favoured ATMs and PC banking while the early thirties supported phone banking. The seniors, on the other hand, were not favoured of all three electronic media.

There was a significant difference in consumer perception among respondents of differing marital status (Table 4.21). Those who were married with children and single parent placed more importance for phone banking than those who were just married or still single did. The reason could be explained in Table 4.22 where the post-graduate students emphasized that electronic banking was very convenient (μ=3.99) and flexible in banking hours (μ=3.97). The undergraduate students revealed that the high cost of computer as an important factor for not using electronic banking.

The income level analysis had shown an ascending order where the highest income group perceived that the electronic banking as very useful (μ=4.45) and very convenient (μ=4.20) whereas the lower income group rated the high cost of computer as the main deterrence (Table 4.24). Similarly, Officers and other lower occupational level also rated high cost of computer as a deterrent but the Managers and Executives do not have such monetary problem (Table 4.25). Harvitz (1996) shared similar idea that the problem of electronic home banking was an economic issue. Though the technology exists to allow much banking activity to take place at home at very low marginal costs, if the initial fixed costs are high and with a low volume of usage, average costs are too high for most customers.

On the other hand, the Engineers and Computer Science employees supported electronic banking for its efficiency and cost effectiveness since it was their nature of work that dealt a lot with the usage of computers. As Davidson (1997) claimed that new electronic distribution channels would offer better and cheaper distribution opportunities and they allowed an entirely new approach to business and consumer marketing. But the Accountants still felt that cost of owning the computer was on the high side (Table 4.26).

We can conclude that there is no significant difference in consumer perception on electronic banking in relation to gender difference. But there were substantial significant differences in consumer perception on electronic banking among respondents of differing ethnic groups, age groups, marital status, educational levels, field of study, income levels, occupational levels and occupational types.

4.4.3 Cluster Analysis

In the final testing of hypothesis, a Cluster analysis was used to identify different level of IT users in relation to consumer behaviour and perception in electronic banking. Cluster analysis is a term given to a body of techniques, used to identify objects or individuals that are similar with respect to some criterion. The purpose of cluster analysis is to classify individuals or objects into a small number of mutually exclusive and exhaustive groups (Zigmund, 1997). In this research, the K-means Cluster Analysis was applied using the SPSS program. The third and final hypothesis to be tested is:

(H3) Those who are more inclined toward the usage of information technology tend to be the early adopters of electronic banking.

Table 4.27: Cluster Analysis for the Usage of Information Technology

Usage of IT	Cluster 1	Cluster 2	Cluster 3	Cluster 4
1. Connected to friends by email			X	X
2. Surfing Internet is wasting time		X		
3. Have own email account		X	X	X
4. IT is making my life miserable			X	
5. Spend most time with computer			X	X
6. Use computer only if necessary			X	
7. Have my own computer at home		X	X	X
8. Only use Word & Excel	X		X	
9. Excited about recent dev't in IT			X	X
10.IT does not increase productivity	X	X	X	
11.Always in touch with IT news			X	X
12.Don't read Computimes /InTech			X	
Total Mean	$\mu_1 = 2.58$	$\mu_2 = 3.50$	$\mu_3 = 4.67$	$\mu_4 = 3.00$
Total Respondents	$N_1 = 25$	$N_2 = 57$	$N_3 = 48$	$N_4 = 48$

Note: X = Highest rating score for a particular item in the scale.

(Negative statements were re-coded in a reverse manner)

Out of the 178 respondents, we have found four distinct cluster groups among the users of information technology, which suggests the following:

(1) Cluster 1, the "IT evaders", is the smallest sub-group with only 25 respondents and has the lowest mean score, $\mu_1 = 2.58$ of the total usage of information technology. This group of individuals are not interested in IT at all and always try to avoid using IT related products but had to use the basic software like Word and Excel only when necessary for their work. Though they do not have their own computer at home, they do believe that IT will somehow help them to improve productivity. They are usually Malay females

in late teens or early twenties, and doing their first degree. In addition, this group also includes those young working adults in their twenties but involved in education, sales and marketing, or even accountancy and finance (Table 4.28).

(2) Cluster 2, the "Internet surfers", is the largest sub-group with 57 respondents and the second highest mean score, $\mu_2 = 3.50$ of the total usage of information technology. They have their own email account with one of the service providers and enjoy "surfing" the Internet to discover new ides from others. This group in fact comprises above average users of computer and they strongly believe that IT helps to improve efficiency in their work. They are mostly females in their early twenties, still single in undergraduate program studying engineering or computer science.

(3) Cluster 3, the "pro-IT users", has the highest mean score, $\mu_3 = 4.67$, which is represented by a group of professional Chinese or Indian males in their late twenties, doing their post-graduate program but still not married. They are earning above average income while working in an engineering or computer industry. This sub-group practically supports the usage of IT with all their heart and mind, and they are constantly in touch with the new development of IT but they see "surfing" the Internet as a waste of time. This could be their perception that Internet is an alternative form of entertainment, which they considered as not productive.

(4) Cluster 4, the "work-oriented users", has an average mean score, $\mu_4 = 3.00$. They are married men or women in their thirties, furthering their post-graduate business program. These Chinese or Malays are also holding managerial or executive positions and in their upper middle and higher income group. This particular group on one hand, spend most of their time on computer and has their own computer or email account but on the other hand, personally think that IT is making their lives miserable. It seems that they use IT out of necessity in their workplace but if given a choice, they would rather minimise the usage of IT.

Table 4.28: Demographic Profile (By Cluster Group)

Demographic Profile	Cluster 1 (%)	Cluster 2 (%)	Cluster 3 (%)	Cluster 4 (%)
1. Gender				
Male	32.0	36.8	52.1	50.0
Female	68.0	63.2	47.9	50.0
2. Race				
Malay	40.0	33.3	22.9	35.4
Chinese	32.0	40.4	47.9	56.3
Indian	20.0	22.8	22.9	4.2
Others	8.0	3.5	6.3	4.2
3. Age Group				
20 years & below	20.0	8.8	6.3	10.9
21 to 25 years	36.0	66.7	39.6	41.3
26 to 30 years	28.0	7.0	33.3	8.7
31 to 35 years	12.0	15.8	16.7	32.6
36 to 40 years	4.0	1.8	2.1	4.3
41 years & above	0.0	0.0	2.1	2.2
4. Marital Status				
Single	72.0	89.5	70.8	60.4
Married without children	12.0	3.5	10.4	16.7
Married with children	16.0	7.0	16.7	22.9
Single Parent	0.0	0.0	2.1	0.0
5. Education Level				
Undergraduate	60.0	82.5	45.8	54.2
Post-graduate	40.0	17.5	54.2	45.8
6. Faculty				
Arts & Social Sciences	4.0	15.8	4.2	4.2
Business & Accountancy	36.0	26.3	45.8	47.9
Economics & Admin.	24.0	8.8	10.4	8.3
Education	8.0	8.8	8.3	8.3
Law	16.0	10.5	6.3	6.3
Science	8.0	7.0	4.2	10.4
Computer Science	4.0	10.5	10.4	10.4
Engineering & Architecture	0.0	12.3	10.4	4.2

Demographic Profile	Cluster 1 (%)	Cluster 2 (%)	Cluster 3 (%)	Cluster 4 (%)
7. Income Group				
RM 1,000 & below	60.0	78.9	43.8	51.1
RM 1,001 to RM 3,000	24.0	8.8	22.9	10.6
RM 3,001 to RM 5,000	12.0	5.3	20.8	19.1
RM 5,001 & above	4.0	7.0	12.5	19.1
8. Occupational Level				
GM / Manager	16.7	35.7	39.3	50.0
Executive / Supervisor	25.0	14.3	17.9	25.0
Officer	16.7	7.1	17.9	4.2
Others	41.7	42.9	25.0	20.8
9. Occupational Type				
Accountancy & Finance	16.7	7.1	10.7	16.7
HRM & Administration	0.0	0.0	7.1	8.3
Sales & Marketing	25.0	14.3	21.4	16.7
Operations	8.3	21.4	10.7	12.5
Engineering	0.0	7.1	10.7	8.3
Computing	0.0	0.0	17.9	0.0
Research & Development	0.0	14.3	3.6	16.7
Others	50.0	35.7	17.9	20.8

How is the banking behaviour of these cluster groups? An analysis was carried out based on ownership, usage and familiarity of electronic banking for various cluster groups revealed that there were significant differences in banking behaviour among the cluster groups (Table 4.29). Those in Cluster 3 or "pro-IT users" was the only group that had used PC banking services since they were the ones with greater knowledge of information technology especially the computer. Together with Cluster 4 or "work-oriented users", both of them had experienced using phone banking services compared to the remaining two groups. From the study, it must be noted that phone banking users are not necessary must be pro-IT as telephone is commonly used by all people. In a second study on consumer perception, we have found that the various Cluster groups tend to share similar views on the benefits and weaknesses of electronic banking (Table 4.30).

Table 4.29: Ownership, Usage and Familiarity with Electronic Banking (By Cluster Group)

Ownership of Account		Cluster 1 (%)	Cluster 2 (%)	Cluster 3 (%)	Cluster 4 (%)
1 Bank Account	Yes	100.0	100.0	100.0	100.0
2 Savings Account	Yes	100.0	100.0	100.0	100.0
3 Current Account	Yes	20.0	12.3	45.8	39.6
	No	80.0	87.7	54.2	60.4
4 Fixed Deposit	Yes	20.0	28.1	39.6	31.3
	No	80.0	71.9	60.4	68.7
5 Others	Yes	12.0	0.0	4.2	6.3
	No	88.0	100.0	95.8	93.7
Usage of Electronic Banking Media		**Cluster 1 (%)**	**Cluster 2 (%)**	**Cluster 3 (%)**	**Cluster 4 (%)**
1 ATM	Yes	100.0	98.2	100.0	100.0
	No	0.0	1.8	0.0	0.0
2 Phone banking	Yes	20.0	3.5	29.2	29.2
	No	80.0	96.5	70.8	70.8
3 PC banking	Yes	0.0	0.0	6.3	0.0
	No	100.0	100.0	93.7	100.0
Familiarity of Electronic Banking Devices		**Cluster 1 (%)**	**Cluster 2 (%)**	**Cluster 3 (%)**	**Cluster 4 (%)**
1 ATM Card	Unfamiliar	12.0	7.0	6.3	8.3
	Not Sure	0.0	0.0	2.1	4.2
	Familiar	88.0	93.0	91.7	87.2
2 Telephone	Unfamiliar	56.0	35.1	37.5	29.2
	Not Sure	28.0	36.8	33.3	33.3
	Familiar	16.0	28.1	29.2	37.5
3 Computer	Unfamiliar	60.0	40.4	56.3	52.1
	Not Sure	28.0	40.4	25.0	39.6
	Familiar	12.0	19.3	18.8	8.3

Table 4.30: Consumer Perception on Electronic Banking (By Cluster Group)

Benefits of Electronic Banking	Cluster 1 (mean)	Cluster 2 (mean)	Cluster 3 (mean)	Cluster 4 (mean)	F Prob.	Decision
1 Very useful	3.96	3.67	4.08	3.79	0.269	Not Sig.
2 Very reliable	3.40	3.18	3.38	3.29	0.702	Not Sig.
3 Very secure	2.92	2.89	2.94	3.04	0.874	Not Sig.
4 Very private	3.24	3.18	2.90	2.98	0.455	Not Sig.
5 Very convenient (place)	3.72	3.75	3.83	3.42	0.351	Not Sig.
6 Very flexible (time)	3.80	3.68	4.00	3.60	0.349	Not Sig.
7 Very efficient	3.40	3.28	3.54	3.44	0.618	Not Sig.
8 Very cost effective	3.36	3.21	3.54	3.38	0.406	Not Sig.
9 Very easy to use	3.76	3.61	3.98	3.81	0.366	Not Sig.
10 Very personalised	3.52	3.37	3.46	3.33	0.875	Not Sig.
11 Very prestigious	2.96	2.98	3.06	3.31	0.274	Not Sig.
12 Very innovative	3.28	3.37	3.67	3.54	0.308	Not Sig.
Reasons for Not Using Electronic Banking	**Cluster 1 (mean)**	**Cluster 2 (mean)**	**Cluster 3 (mean)**	**Cluster 4 (mean)**	**F Prob.**	**Decision**
1 Risk of losing PIN	3.12	3.25	3.27	3.27	0.972	Not Sig.
2 Time consuming	2.88	3.05	2.64	3.02	0.239	Not Sig.
3 Lack of security	3.28	3.46	3.33	3.33	0.904	Not Sig.
4 Lack of privacy	3.04	3.51	3.29	3.29	0.350	Not Sig.
5 Lack of trust	2.92	3.47	3.51	3.48	0.143	Not Sig.
6 System breakdown	3.68	3.68	3.82	3.73	0.925	Not Sig.
7 Limited services	3.52	3.18	3.24	3.38	0.505	Not Sig.
8 No personal attention	3.28	3.07	2.89	3.33	0.201	Not Sig.

Reasons for Not Using Electronic Banking	Cluster 1 (mean)	Cluster 2 (mean)	Cluster 3 (mean)	Cluster 4 (mean)	F Prob.	Decision
9 Difficult to use	3.08	2.74	2.87	2.98	0.414	Not Sig.
10 High cost of computer	3.48	3.07	2.71	3.04	0.093	Not Sig.
11 No time to learn	2.64	2.89	2.51	3.23	0.022	Significant
12 Embarrass to ask	2.80	2.53	2.18	2.92	0.009	Significant
13 Don't know how to use	3.00	2.95	2.64	3.21	0.141	Not Sig.
14 Afraid of Y2K problem	3.16	2.96	2.73	2.81	0.458	Not Sig.
15 Don't need them	2.76	2.74	2.27	2.77	0.108	Not Sig.
Importance of Electronic Banking	**Cluster 1 (mean)**	**Cluster 2 (mean)**	**Cluster 3 (mean)**	**Cluster 4 (mean)**	**F Prob.**	**Decision**
1 ATM	4.16	4.16	4.33	4.17	0.895	Not Sig.
2 Phone banking	3.76	3.68	3.63	3.63	0.959	Not Sig.
3 PC banking	3.80	3.58	3.65	3.50	0.734	Not Sig.
Future Usage of Electronic Banking	**Cluster 1 (mean)**	**Cluster 2 (mean)**	**Cluster 3 (mean)**	**Cluster 4 (mean)**	**F Prob.**	**Decision**
1 ATM	4.04	4.35	4.67	4.42	0.097	Not Sig.
2 Phone banking	3.64	3.82	4.04	3.88	0.376	Not Sig.
3 PC banking	3.80	3.75	4.17	3.94	0.165	Not Sig.

In short, the Cluster analysis identified that there were significant differences in banking behaviour among the various groups, especially in the chosen electronic banking media in relation to the level of usage of information technology. In other words, those with higher level of IT usage will somehow adopt PC banking as their choice for transacting with the bank.

4.4.4 Additional Findings

A further analysis was done to determine three new variables namely, positiveness of attitude on electronic banking; inhibition on electronic banking; and friendliness of information technology. It was done by adding up all the variables in the list of benefits of electronic banking; list of reasons for not using electronic banking; and list of information technology usage. Then, the total scale was recoded into three level, "low", "medium" and "high".

Table 4.31: Correlation between Positiveness of Attitude on Electronic Banking, Inhibition on Electronic Banking and Friendliness on Information Technology

		Positive Attitude	Friendliness of IT
Pearson Correlation	Positive Attitude	1.000	
	Friendliness of IT	0.026	1.000
	Inhibition on EB	-0.170*	-0.146
Significant (2-tailed)	Positive Attitude		
	Friendliness of IT	0.726	
	Inhibition on EB	0.025	0.053
Number	Positive Attitude	178	
	Friendliness of IT	178	
	Inhibition on EB	175	

Note: * Correlation is significant at the 0.05 level (2-tailed)

The relationship between the three variables could be clearly defined in Table 4.31 above, where positiveness of attitude toward electronic banking variable is positively correlated with friendliness of information technology variable. Conversely, the inhibition on electronic banking variable is both significantly and negatively correlated with the other two variables. In other words, those who are more inclined toward the usage of information technology and with lesser fear of electronic banking would be the early adopter of electronic banking. This new finding is supporting the earlier Cluster analysis where the pro-IT users are also believed to be the early adopters of electronic banking.

Table 4.32: Demographic Profile

(Positiveness of Attitude on Electronic Banking)

Demographic Profile	Low (%)	Medium (%)	High (%)
	N = 17	N = 71	N = 90
1. Gender			
Male	64.7	38.0	44.4
Female	35.3	62.0	55.6
2. Race			
Malay	23.5	38.0	28.9
Chinese	35.3	43.7	48.9
Indian	41.2	14.1	15.6
Others	0.0	4.2	6.7
3. Age Group			
20 years & below	0.0	20.0	4.5
21 to 25 years	64.7	41.4	50.6
26 to 30 years	11.8	17.1	19.1
31 to 35 years	5.9	18.6	23.6
36 to 40 years	11.8	1.4	2.2
41 years & above	5.9	1.4	0.0
4. Marital Status			
Single	82.4	76.1	71.1
Married without children	5.9	7.0	13.3
Married with children	11.8	16.9	14.4
Single Parent	0.0	0.0	1.1
5. Education Level			
Undergraduate	76.5	62.0	58.9
Post-graduate	23.5	38.0	41.1
6. Faculty			
Arts & Social Sciences	11.8	5.6	8.9
Business & Accountancy	29.4	38.0	41.1
Economics & Admin.	11.8	12.7	10.0
Education	5.9	8.5	8.9
Law	11.8	8.5	8.9
Science	0.0	5.6	10.0
Computer Science	17.6	11.3	6.7
Engineering & Architecture	11.8	9.9	5.6

Demographic Profile	Low (%)	Medium (%)	High (%)
7. Income Group			
RM 1,000 & below	75.0	62.0	54.4
RM 1,001 to RM 3,000	18.8	16.9	13.3
RM 3,001 to RM 5,000	6.3	8.5	20.0
RM 5,001 & above	0.0	12.7	12.2
8. Occupational Level			
GM / Manager	0.0	40.0	41.9
Executive / Supervisor	20.0	20.0	20.9
Officer	20.0	13.3	9.3
Others	60.0	26.7	27.9
9. Occupational Type			
Accountancy & Finance	20.0	13.3	11.6
HRM & Administration	0.0	10.0	2.3
Sales & Marketing	0.0	16.7	23.3
Operations	20.0	10.0	14.0
Engineering	0.0	10.0	14.0
Computing	0.0	3.3	9.3
Research & Development	0.0	10.0	9.3
Others	60.0	26.7	23.3

Table 4.32 revealed that the respondents who had high level of positive attitude toward electronic banking were usually married Chinese in their late twenties or early thirties. They were the post-graduate students in their executive or managerial positions and earning between RM3,000 to RM5,000 per month. Quite similarly, those who were more friendly toward information technology were mostly Chinese males in their twenties and either singles or just married. They were also the post-graduate students but in their executive or officer positions and earning between RM1,000 to RM5,000 per month (Table 4.34). On the other hand, the inhibitors of electronic banking were Malay females in the early twenties or late thirties. They were either the undergraduates or those working as Accountants, Operations or other positions (Table 4.33).

Table 4.33: Demographic Profile
(Inhibition on Electronic Banking)

Demographic Profile	Low (%)	Medium (%)	High (%)
	N = 26	N = 108	N = 41
1. Gender			
Male	50.0	45.4	34.1
Female	50.0	54.6	65.9
2. Race			
Malay	23.1	25.9	53.7
Chinese	53.8	48.1	36.6
Indian	23.1	21.3	4.9
Others	0.0	4.6	4.9
3. Age Group			
20 years & below	11.5	11.3	7.3
21 to 25 years	42.3	46.2	56.1
26 to 30 years	26.9	17.9	12.2
31 to 35 years	15.4	21.7	17.1
36 to 40 years	3.8	0.9	7.3
41 years & above	0.0	1.9	0.0
4. Marital Status			
Single	80.8	73.1	73.2
Married without children	15.4	11.1	4.9
Married with children	3.8	15.9	22.0
Single Parent	0.0	0.0	0.0
5. Education Level			
Undergraduate	61.5	58.3	73.2
Post-graduate	38.5	41.7	26.8
6. Faculty			
Arts & Social Sciences	0.0	9.3	9.8
Business & Accountancy	34.6	39.8	36.6
Economics & Admin.	15.4	9.3	14.6
Education	7.7	6.5	14.6
Law	11.5	9.3	4.9
Science	11.5	6.5	7.3
Computer Science	7.7	10.2	9.8
Engineering & Architecture	11.5	9.3	2.4

Demographic Profile	Low (%)	Medium (%)	High (%)
7. Income Group			
RM 1,000 & below	57.7	56.1	68.3
RM 1,001 to RM 3,000	15.4	15.9	14.6
RM 3,001 to RM 5,000	15.4	15.0	9.8
RM 5,001 & above	11.5	13.1	7.3
8. Occupational Level			
GM / Manager	27.3	44.0	26.7
Executive / Supervisor	27.3	20.0	20.0
Officer	0.0	12.0	20.0
Others	45.5	24.0	33.3
9. Occupational Type			
Accountancy & Finance	9.1	14.0	13.3
HRM & Administration	0.0	6.0	6.7
Sales & Marketing	18.2	20.0	13.3
Operations	0.0	14.0	20.0
Engineering	18.2	8.0	0.0
Computing	9.1	8.0	0.0
Research & Development	9.1	10.0	6.7
Others	36.4	20.0	40.0

Table 4.34: Demographic Profile

(Friendliness of Information Technology)

Demographic Profile	Low (%)	Medium (%)	High (%)
	N = 4	N = 79	N = 95
1. Gender			
Male	25.0	41.8	46.3
Female	75.0	58.2	53.7
2. Race			
Malay	50.0	40.5	24.2
Chinese	0.0	41.8	50.5
Indian	50.0	12.7	20.0
Others	0.0	5.1	5.3
3. Age Group			
20 years & below	25.0	11.5	8.5
21 to 25 years	25.0	51.3	46.8
26 to 30 years	50.0	10.3	22.3
31 to 35 years	0.0	24.4	17.0
36 to 40 years	0.0	1.3	4.3
41 years & above	0.0	1.3	1.1
4. Marital Status			
Single	75.0	74.7	73.7
Married without children	25.0	8.9	10.5
Married with children	0.0	16.5	14.7
Single Parent	0.0	0.0	1.1
5. Education Level			
Undergraduate	50.0	69.9	55.8
Post-graduate	50.0	30.4	44.2
6. Faculty			
Arts & Social Sciences	0.0	10.1	6.3
Business & Accountancy	25.0	34.2	43.2
Economics & Admin.	25.0	12.7	9.5
Education	25.0	11.4	5.3
Law	0.0	13.9	5.3
Science	25.0	7.6	6.3
Computer Science	0.0	8.9	10.5
Engineering & Architecture	0.0	1.3	13.7

Demographic Profile	Low (%)	Medium (%)	High (%)
7. Income Group			
RM 1,000 & below	50.0	65.8	54.3
RM 1,001 to RM 3,000	50.0	10.1	18.1
RM 3,001 to RM 5,000	0.0	6.7	17.0
RM 5,001 & above	0.0	33.3	10.6
8. Occupational Level			
GM / Manager	0.0	46.7	34.8
Executive / Supervisor	50.0	13.3	23.9
Officer	0.0	6.7	15.2
Others	50.0	33.3	26.1
9. Occupational Type			
Accountancy & Finance	0.0	20.0	8.7
HRM & Administration	0.0	3.3	6.5
Sales & Marketing	50.0	20.0	17.4
Operations	0.0	10.0	15.2
Engineering	0.0	6.7	8.7
Computing	0.0	0.0	10.9
Research & Development	0.0	3.3	13.0
Others	50.0	36.7	19.6

Table 4.35: Relationship between Positiveness of Attitude on Electronic Banking, Inhibition on Electronic Banking and Friendliness on Information Technology with Various Cluster Groups

	Cluster 1 (%)	Cluster 2 (%)	Cluster 3 (%)	Cluster 4 (%)
Friendliness of IT				
Low	16.0	0.0	0.0	0.0
Medium	68.0	47.4	0.0	72.9
High	16.0	52.6	100.0	27.1
Positive Attitude				
Low	4.0	10.5	10.4	10.4
Medium	48.0	42.1	33.3	39.6
High	48.0	47.4	56.3	50.0
Inhibition of EB				
Low	20.0	12.3	15.6	14.6
Medium	52.0	64.9	73.3	52.9
High	28.0	22.8	11.1	33.3

Note: Cluster 1 = "IT evaders"; Cluster 2 = "Internet surfers";
Cluster 3 = "Pro-IT users"; Cluster 4 = "Work-oriented users"

Finally, the cluster analysis is used to understand the relationship between the three variables. The above Table 4.35 revealed that the pro-IT users were 100% friendly to information technology, followed by the Internet surfers. The work-oriented users and IT evaders were moderate friendly toward IT. This could be reflected in their attitude toward electronic banking, where the respondents in general were highly positive for all cluster groups. They were also moderate inhibitors of electronic banking. Hence, the university students have less resistance toward the implementation of electronic banking, as they are friendly toward using information technology products.

4.5 SUMMARY OF RESEARCH RESULTS

The results of this study discovered some interesting insights on consumer behaviour and perception on electronic banking in Malaysia. As shown in Table 4.02, Malaysians in general have been regular users of ATMs but they have yet to fully adopt both the phone and PC banking. Only selected group of people with higher social status, has been exposed to phone banking services and sad to say, hardly any Malaysian utilise the PC banking services. This should not be a discouragement to the bankers since both services are relatively new in the Malaysia market, as the adoption process requires more time before reaching the mass consumers.

The comparison on banking behaviour between undergraduates and post-graduates had revealed substantial significant differences. First, post-graduates had a higher level of awareness on electronic banking media, in particular exposure to the phone and PC banking. Also, their choices of banks differ from the undergraduates, as they were able to recall foreign banks' advertisements better. The most profound findings were bank account ownership and usage of electronic banking media. It was a clear distinction that more post-graduates held different bank accounts than the undergraduates did, and they were the main users of phone and PC banking. This explains to us that being young and educated are insufficient a criterion to adopt new technology, rather social economic status plays an important role in determining the actual usage of IT products as technological products are relatively expensive in Malaysia.

The study also found that the most common services used by consumers in ATMs were cash withdrawal, balance enquiry and cash or cheque deposit. For phone banking, consumers usually ask for balance enquiry, bank information and request for bank statement. Services like funds transfer, balance enquiry, interest rate and foreign exchange rate enquiries are popular for PC banking. Among all these electronic delivery channels, Malaysians in general were satisfied with ATMs but the phone and PC banking had yet to fulfill their expectations.

On the topic of consumer perception, the study confirmed that Malaysians also perceived that electronic banking as very useful, very easy to use, flexible in time and convenience of location. Chebet and Filiatrault (1993) have found that individuals generally find the waiting time in queues unacceptable and a reflection of poor service quality. Consumers nowadays opt for alternative delivery systems to ease their banking chores and this is fueled by a growing number of people who has time constraint due to obligation to work and family.

Conversely, the major deterrent to the growth of electronic banking includes the fear of system breakdown, a lack of trust in unseen electronic transaction, a lack of security and a lack of privacy. Similar findings by Ho and Ng (1994) explained that perceived psychological, financial, physical, time and performance risks affect consumer adoption rate, use of, and behaviour towards electronic fund transfer at point of sales. Nevertheless, Malaysians have confidence with the various electronic banking media. In fact, they had forecasted that they would likely use these electronic delivery channels in the future.

The relationship between consumer perception on electronic banking and various demographic variables revealed some valuable findings. The difference in age group was the most significant factor where younger respondents tend to rate higher for the benefits of electronic banking and responded favourably to the usage of ATMs, phone and PC banking, compared to the older generation who were skeptical about it. Similarly, those Executives and Managers, earning higher income had supported electronic banking, unlike those who were in the lower income level revealed that the high cost of computers was a deterrent.

In the final hypothesis, the study has identified four distinct Cluster groups of IT users with the help of SPSS program, namely:

- "IT evaders" who are not interested in IT at all and are always try to avoid using IT products unless necessary.
- "Internet surfers" as the name explained, are those who enjoy "surfing" the Internet and have above average knowledge of computers.

- "Pro-IT users" are the experts in computer as they constantly use and keep in touch with the latest development on IT.
- "Work-oriented users" are those who have to use computer frequently in their studies or workplace but personally felt that IT is making their lives miserable.

With the new defined groups, the study found that the pro-IT users were the actual users of PC banking facility. In addition, the study found that those who are friendlier toward information technology would also be more positive toward electronic banking and has less fear of using them. Hence, those who are more inclined toward the use of IT are believed to be the early adopters of electronic banking media.